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# Open Access Comments

## Opening Comments

| Party | Date Rec'd |
|---|---|
| America Online, Inc. | 10/22/99 |
| American Lung Assoc. | 10/22/99 |
| Arriba Juntos | 10/27/99 |
| AT&T & TSC | 10/27/99 |
| California Cable Television Assoc. | 10/27/99 |
| California Council for Economic and Environmental Balance | 10/27/99 |
| Californian Small Business Roundtable | 10/27/99 |
| Excite @ Home | 10/27/99 |
| GTE Internetworking Incorporated | 10/27/99 |
| ICMS | 10/27/99 |
| National Latino Communications Center | 10/27/99 |
| Netaction | 10/20/99 |
| Open Access Alliance | 10/27/99 |
| OpenNET Coalition | 10/27/99 |
| Pacific Bell | 10/27/99 |
| South of Market Employment Center | 10/28/99 |
| SPUR | 10/27/99 |
| World Institute on Disability | 10/27/99 |

BRIAN P. ROBERTS
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# SUMMARY OF RESPONSES TO
# OPEN ACCESS
# REQUEST FOR INFORMATION (RFI)

The Department of Telecommunications and Information Services (DTIS) issued a Request for Information (RFI) to solicit comments from interested parties regarding the issue of "open access."

Opening Comments to the RFI were due on October 27, 1999 and Reply Comments were due November 8, 1999. Below is a summary of the opening comments received by DTIS.

**Opening Comments Received**
25

**Summary of Positions**

Generally Supporting
Open Access (not specifically a
requirement) - 7

Supporting an Open Access Requirement
by the City - 9

Opposed to an Open Access Requirement
by the City - 9

**Summary of Respondents by Interest Group**

Cable Service Providers/Cable Assn - 2

ISPs - 5

Interest Groups for the Disabled or Minorities - 3

Internet and Telecommunications Advocacy Groups - 5

Other Community Interest Groups - 5

Individuals - 4

## General Themes of Comments

Below are examples of the general tone of respondents' comments. The following is not intended to represent an exhaustive summary.

- Parties supporting "open access" believe that it is an important policy that fosters competition, better prices and benefits to consumers.
- Opponents of "open access" argue that the market should be allowed to decide the business arrangements of cable operators and ISPs.
- Should the City chose to impose an "open access" requirement, supporters advocating this requirement believe that the details of business arrangements, technical requirements, and interconnection will be addressed by the cable operator and ISPs in good faith negotiations.
- Most parties suggesting an "open access" requirement do not feel that the City should be involved in the direct regulation of rates, interconnection, or technical standards.
- Parties opposed to an "open access" requirement involving interconnecting ISPs believe that the requirement would jeopardize the benefits of broadband cable modem service such as network reliability and speed.

A copy of the RFI is available on the Telecommunications Commission website at: www.ci.sf.ca.us/telecommunications_commission. Copies of the comments and reply comments are available for review at the San Francisco Public Library Main Branch, 5th Floor, Government Documents section.

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Released: October 4,1999

# OPEN ACCESS REQUEST FOR INFORMATION

## 1. INTRODUCTION AND BACKGROUND

The purpose of this request for information is to develop sufficient information to implement the City policy adopted by the Board of Supervisors on July 26, 1999 “supporting open non-discriminatory access by consumers to broadband access services and non-discriminatory access to all content on the Internet.” (Resolution No. 718-99, Board of Supervisors file 990455, or the “Open Access Resolution”) The perspective of this inquiry is to determine how the City can craft an effective open access requirement, not to determine whether open access is the correct policy. This inquiry is directed at the twin aspects of open access identified in the Resolution: (1) non-discriminatory access to broadband transport services and (2) non-discriminatory access to content on the Internet.

In its Open Access Resolution, the Board urged the City Attorney, the Department of Telecommunications and Information Services (DTIS) and the Telecommunications Commission “to report back to the Board of Supervisors by December 15, 1999 on federal, state and local legislative, regulatory, judicial and technical developments and recommend a course of action for the city.” (Resolution No. 718-99) DTIS believes that it can obtain sufficient information concerning legislative, regulatory and judicial developments through other sources, but that it needs additional information in order to assess technical issues.

The Open Access Resolution also directs DTIS to “monitor the market for broadband access services in order to gauge the necessity or feasibility of imposing an open access requirement.” In order to comply with this request, this inquiry will ask questions about the broadband market, which may affect the City’s implementation of an open, access requirement. In addition, DTIS understands that the staff of the Federal Communications Commission (FCC) is in the process of preparing a report on the broadband market that will be useful for preparing this report.

875 Stevenson Street, Fifth Floor • San Francisco, CA 94103-0948
Office: (415) 554-0800 • Facsimile: (415) 554-4733

DTIS hopes to implement an open access requirement with a minimum amount of expense to the City and intervention in the marketplace. DTIS asks a broad range of questions in order to design a program that will be as effective and efficient as possible. DTIS has not concluded that the City should play a role in addressing all of the issues about which it seeks comment. Rather, the Department is seeking comment in order to identify which issues the City can and should effectively address in order to meet the Board of Supervisors' objectives.

### 1.1 FILING COMMENTS

Opening comments are due October 22 and reply comments are due November 3, 1999. Opening and reply comments can be submitted on paper or electronically. DTIS encourages respondents to participate in the accompanying Open Access electronic forum located on the City's website at http://www.ci.sf.ca.us/telecommunications_commission/. This electronic forum will be available between October 15 and November 10, 1999.

Longer comments, i.e. comments over ten pages or that have attachments, should be submitted electronically and on paper. Opening comments should be no more than 50 pages long, with no more than 5 appendices totaling no more than 120 pages. Reply comments should be no more than 10 pages long with no more than 2 appendices totaling 20 pages. Typed opening and reply comments should be one-and-a-half spaced, in 12-point type, with at least 1-inch margin. Providers of longer comments should submit three paper copies.

All written comments, should be addressed to:

Open Access Comments
Department of Telecommunications and Information Services
875 Stevenson St.
San Francisco, CA 94103-0948

Electronic comments should be sent to DTIS_Open_Access@ci.sf.ca.us or submitted to the web-based forum.

Opening comments will be available for public review at the San Francisco Public Library's Government Documents Center on October 25, 1999; reply comments will be available on November 5, 1999.

## 2. POLICY GOALS

Resolution No. 718-99 states two distinguishable policy goals under the term open access. One of the goals is open, non-discriminatory access to broadband access services. The other goal is open, non-discriminatory access to content on the Internet. DTIS believes that these are both important policy goals that may need to be more clearly distinguished. DTIS believes that for a broadband network operator to provide "non-discriminatory access to broadband access services" means for the operator to provide unaffiliated ISPs the service of transporting data on rates, terms and conditions that are at least as favorable as those on which the operator provides such high speed data transport to itself or to its affiliate(s). DTIS believes that open, non-discriminatory access to content should be defined as ready access to all information on the Internet.

Requiring non-discriminatory access to the broadband platform is intended to allow consumers to choose their ISP over the broadband platform much as they do today when they purchase dial-up Internet access. The immediate, tangible consumer benefits of this approach are that it prevents consumers from having to pay twice if (1) they wish to keep their existing e-mail address with a provider that includes an e-mail address as part of its ISP service and (2) they wish to have access to proprietary content provided by an ISP. Another consumer benefit is greater choice among a variety of ISPs that will be competing to provide new and innovative services over broadband platform. A less direct benefit will be that with greater choice of providers, it will be more difficult for any single ISP to restrict access to information over the Internet.

**Do the two proposed definitions of open access adequately capture the public policy goals stated in the Open Access Resolution? Should the proposed policy apply only to residential services?**

## 3. NON-DISCRIMINATORY ACCESS TO BROADBAND TRANSPORT SERVICES

### 3.1 Definitions

In order to implement the open access policy, the City must determine which providers it will apply to. DTIS believes that a provider of broadband services should be defined as any entity that receives a franchise or similar grant of authority from the City to use the City streets to provide communications services. DTIS believes that broadband should be defined as having the capability of supporting data transmission at speeds in excess of 200 kilobits per second (kbps) in the last mile in both the provider-to-consumer ("downstream") and consumer-to-provider ("upstream") directions. This is consistent with the FCC's definition of broadband in its Report on the Deployment of Advanced Telecommunications. (CC Docket No. 98-146, *Report*, FCC 99-5, released February 2, 1999, ¶ 20)

**Is there any reason that the City should use alternative definitions of broadband provider and broadband?**

### 3.2 Proposed Rules

In order to implement an open access policy, the City will need to adopt a specific open access rule. One example of such a rule is the recent open access ordinance adopted by Broward County, Florida. (Broward County. Ordinance No. 1999-41. Effective 7/19/99. http://www.co.broward.fl.us//cri03000.htm) Such a rule may be embodied in a provision of a specific franchise or franchises or through some other legal instrument, i.e., ordinance or regulation. The Department is not seeking comment on what legal instrument should be used; rather, we are seeking the text of the proposed rule, regardless of what legal instrument may ultimately be used to impose it.

**Please provide text of a proposed rule and explain why the proposed approach is superior to alternatives in terms of (1) protecting consumer choice and (2) enforceability.**

### 3.3 Pricing

In implementing a policy proposing third party access to cable telecommunications infrastructure, the Canadian Radio-Telephone Corporation decided to regulate the price at which the cable company must offer high speed Internet access services on a wholesale basis to ISPs. The CRTC decided to set the price for these services on the grounds "that it would not be appropriate to rely solely on the marketplace to ensure that rates charged by incumbent cable carriers for higher speed access service are just and reasonable." (CRTC 99-8, July 6, 1999, ¶ 17)

**Is it sufficient for the City's open access requirement to state that broadband providers must offer high speed Internet transport services unaffiliated ISPs on the same rates as it offers them to itself and its affiliated ISP(s)? What, if any, role should the City play in enforcing non-discriminatory pricing and resolving pricing disputes between broadband platform owners and unaffiliated ISPs? Should the City follow the Canadian approach in setting prices?**

### 3.4 Business Processes

There are a number of business processes that must be developed in order to make it possible for an ISP to use another operator's broadband platform under an open access regime. These business processes, or "operation support systems", include ordering, provisioning, billing, maintenance and customer service arrangements. These arrangements are an integral part of implementing competition and have proven to be among the most complex and for state and federal regulators implementing the competitive provisions of the 1996 Telecommunications Act for telephone services. In addition, these business processes may represent an opportunity for a broadband operator to defeat the objectives of an open access policy by creating subtle hurdles for unaffiliated ISPs. For example, orders for installation of cable modem service may be processed electronically and flow automatically from system to system for an affiliated ISP, but might require slower manual processes for an unaffiliated ISP.

**Can the City rely on the industry to develop effective business arrangements without intervention? Should the City facilitate the creation of standards regarding business processes or have a role in resolving disputes concerning these processes?**

### 3.5 Network Management

Opponents of open access have argued that network management is necessary in order to deliver high quality broadband Internet access. According to this view, the fact that subscribers share bandwidth between the fiber optic node and the typical residential home makes network management necessary. In addition, these network management functions become more difficult if open access is required and several independent ISPs are serving customers.

**What are the principal network management functions that must be performed in order to provide open access over a broadband platform with shared bandwidth? To what extent, if at all, are capacity management issues increased with multiple ISPs using the same shared bandwidth? Is there a limit on the number of unaffiliated ISPs that can be accommodated? Will open access degrade performance or limit access to new services? How should the network be managed? Should the City play a role in addressing network management issues?**

### 3.6 Broadband Marketplace

In the Open Access Resolution, the Board of Supervisors asked DTIS to monitor the market for broadband services in order to gauge the necessity of imposing an open access requirement. (Resolution No. 718-99) In order to fulfill this requirement, DTIS is asking a series of questions regarding the market for broadband services.

DTIS is aware of two primary technologies for providing broadband access to San Francisco residents: digital subscriber lines (DSL) over copper, twisted pair telephone lines and high speed Internet access over fiber/coaxial cable plant. DSL services are currently available to San Francisco consumers. The open network requirements imposed on telephone companies mean that high speed Internet access will be provided by a number of ISPs through the DSL services of Pacific Bell and other competitive carriers, such as Northpoint. As AT&T completes its planned rebuild of its cable network to provide a minimum bandwidth of 750 Mhz, cable modem service will become available to San Francisco consumers. In addition, San Francisco has recently received an application for a cable franchise from a company, RCN Telecom Services of California, that also plans to offer high speed Internet access. DTIS is not aware of any other providers, including wireless or satellite, that currently offer San Francisco residential consumers high speed Internet access service.

**What other providers of broadband access to residential consumers are available now? What other providers of broadband access to residential consumers will be available in one, three and five years? Are there any technical constraints that will limit the availability of these services to any segment of the City? (For example, would hilly terrain or pervasive fog make local multipoint distribution service (LMDS), a new type of high speed wireless connection, impractical in certain San Francisco neighborhoods?) As the number of providers of broadband access to residential consumers increases, should the City continue to maintain an open access requirement? What impact will this increase in capacity/number of providers have on the market for broadband transport services? Will excess capacity force transport providers to open their platforms? Should the City develop a standard for effective competition when it should no longer require open access? Should RCN be subject to the same open access requirement that is applied to the incumbent cable operator?**

**Considering all potential revenue streams, including cable, telephone and wholesale Internet access service, to what extent will open access increase/decrease revenues and financial risk? To what extent will an open access requirement to increase/decrease use of an operator's broadband platform?**

### 3.7 Technical Arrangements

To facilitate DTIS reporting on developments in the industry pursuant to the Open Access Resolution, provide a description of any promising technical arrangements for providing open access. Please explain these proposed technical arrangements. The City of Los Angeles' Information Technology Agency recently reported that multiple provider platforms were feasible, but not necessary compliant with Data Over Cable System Interface Specification (DOCSIS) standards. (City of Los Angeles Information Technology Agency, "Broadband Access Report" June 1999, pp. 30 - 31. http://www.ci.la.ca.us/CITYVIEW/broadbnd.pdf) The City is not interested in mandating a particular technical solution; however, we do have an interest in ensuring that any rule it adopts does not inadvertently preclude a promising technical solution.

**Comment on any way that the City can structure its open access rule to accommodate the development of efficient technical solutions. Provide a description of any planned or completed trials or actual implementation of proposed technical arrangements. Do the trials demonstrate that the proposed technical solution would function in a large cable system with multiple ISPs? Will any proposed technical arrangement decrease the functionality of the cable modem to end users in any way?**

### 3.8 Interconnection

Proponents of open access have proposed a wide variety of possible methods for interconnecting the facilities of an unaffiliated ISP with the broadband facilities of a broadband provider.

**Does the way the City structures its open access requirement have any implications for interconnection arrangements? Should the City require interconnection at any point chosen by the unaffiliated ISP or require interconnection only at the same point that the broadband facility provider interconnects with affiliated ISPs? Are various methods of interconnection compatible? Will the method of interconnection have implications for the types of service that an ISP can offer its subscribers? Should the City play any role in monitoring the development of interconnection or collocation solutions or resolving disputes concerning interconnection or collocation? Should the City play a role in resolving disputes concerning collocation of the equipment of unaffiliated ISPs on a cable operator's property?**

## 4. ACCESS TO CONTENT OVER THE INTERNET

Resolution No. 718-99 establishes City policy supporting "open, non-discriminatory access by consumers to all content on the Internet." The resolution further urges the City Attorney, DTIS, and the Telecommunications Commission to "require cable companies and other providers of high-speed Internet access services to permit unrestricted access to all content on the Internet in addition to allowing customers a single "click through" directly to such content." A single click through means that a consumer can access any ISP of their choice by clicking on an icon on their personal computer's desktop.

Several cities have begun to examine the question of access to information. The City of Los Angeles' Information Technology Agency recommended a safeguard similar to that in the Open Access Resolution. The City of Seattle adopted a series of measures to promote openness and access to information, namely that (1) the high speed Internet access platform will maintain currency with current standards for interoperability with Internet protocol applications, (2) that subscribers should be able to reach any and all information on the Internet and be able to reach that information through unaffiliated ISPs without viewing content by an affiliated ISP, (3) a requirement for the cable operator to establish a data network backbone connection to an in-region network access point or "carrier hotel" at which educational and governmental information sources could interconnect. The purpose of this "carrier hotel" requirement is to provide quicker, more immediate access to educational and governmental information. This "carrier hotel" interconnection arrangement was held out to ISPs as well, as a means of making them more accessible to Excite @ Home subscribers. (City of Seattle Ordinance approving the transfer of control of the franchise from TCI to ATT. http://www.ci.seattle.wa.us/cable/leg/attxfer5.htm)

A recent Working Paper issued by the Berkeley Roundtable on the International Economy (BRIE) discusses a number of potential problems with closed access to the cable modem platform. The paper suggests that "@Home's concept of what can and should be done over the Internet precludes a range of innovation and experimentation by other service providers and by its own customers." (BRIE, "Defending the Internet

Revolution in the Broadband Era: When Doing Nothing is Doing Harm" p. 25. http://e-conomy.berkeley.edu/pubs/wp/ewp12.html) The paper identifies a number of specific practices that may inhibit possible consumer uses of the product. These practices include limits on the overall amount of downstream video, limits on upstream traffic which may curtail consumers ability to use Internet telephony and video teleconferencing, and extensive monitoring to enforce other rules which may have privacy implications. (BRIE Report at 26)

The BRIE paper also suggests that some of the performance features in the Excite @ Home network may be used in a way that is harmful to consumers by subtly steering them to certain content providers by providing them easier or quicker access. For example, the Excite @ Home network contains a feature which pre-loads content from certain content providers with which it has commercial arrangements. This makes accessing content from these content providers quicker than it is form others. In particular, the paper asserts that Excite @ Home might subtly steer consumers toward certain content over other content. According to the report Excite @ Home offers speedier service to Internet content providers who agree to become "content partners." (BRIE Report at 29)

**How well will measures such as a "single click through" requirement or a "carrier hotel" arrangement protect citizens' access to information over the Internet? Are there other measures that the City should consider to further protect citizens' access to information over the Internet?**

**How can the City address the concerns regarding restrictions on access to certain types of content, such as video streaming, or certain types of uses of high speed Internet services? Do some of the restrictions perform a network management function? If so, could the same network management function be accomplished in a less obtrusive way? How can the City help protect consumers' privacy? To what extent are these concerns addressed by a requirement to provide non-discriminatory access to unaffiliated ISPs? To what extent do to the alleged "content bias" associated with Excite @ Home's implementation of**

**network performance features exist? What role should the City play to mitigate these problems?**

**Amendment of the Whole 7/26/99**

File No. 990455

Resolution No. 718-99

[Non-Discriminatory Access to High-Speed Broadband Networks]

ESTABLISHING CITY POLICY SUPPORTING OPEN NON-DISCRIMINATORY ACCESS TO BROADBAND ACCESS SERVICES AND SUPPORTING NON-DISCRIMINATORY ACCESS BY CONSUMERS TO ALL CONTENT ON THE INTERNET; URGING THE SAN FRANCISCO CITY ATTORNEY, THE DEPARTMENT OF TELECOMMUNICATIONS AND INFORMATION SERVICES AND THE TELECOMMUNICATIONS COMMISSION TO TAKE ALL POSSIBLE ACTION TO IMPLEMENT THIS POLICY AT THE FEDERAL, STATE, AND LOCAL LEVEL BY: 1) MONITORING LEGISLATIVE, REGULATORY AND JUDICIAL DEVELOPMENTS IN THE CALIFORNIA LEGISLATURE, CONGRESS, THE FEDERAL COMMUNICATION COMMISSION AND FEDERAL COURTS ADDRESSING HIGH-SPEED INTERNET ACCESS; 2) MONITORING THE MARKET FOR BROADBAND ACCESS SERVICES IN ORDER TO GAUGE THE NECESSITY OR FEASIBILITY OF IMPOSING AN OPEN ACCESS REQUIREMENT; 3) REQUIRING CABLE COMPANIES AND OTHER PROVIDERS OF HIGH-SPEED INTERNET ACCESS SERVICES TO PERMIT UNRESTRICTED ACCESS TO ALL CONTENT ON THE INTERNET IN ADDITION TO ALLOWING SUBSCRIBERS A SINGLE "CLICK THROUGH" DIRECTLY TO SUCH CONTENT; 4) REQUIRING CABLE COMPANIES AND OTHER PROVIDERS OF HIGH-SPEED INTERNET ACCESS SERVICES TO PROVIDE UNIVERSAL ACCESS BY CONSUMERS TO ANY CABLE MODEM OR HIGH-SPEED INTERNET ACCESS SERVICE IN A SERVICE AREA IN WHICH CABLE MODEM OR HIGH-SPEED INTERNET ACCESS SERVICE IS OFFERED; 5) FILING AN *AMICUS BRIEF* IN SUPPORT OF THE CITY OF PORTLAND'S NON-DISCRIMINATORY ACCESS REQUIREMENT IN THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT AND; 6) URGING THE SAN FRANCISCO CITY ATTORNEY, THE DEPARTMENT OF TELECOMMUNICATIONS AND INFORMATION SERVICES, AND THE TELECOMMUNICATIONS COMMISSION TO REPORT BACK TO THE BOARD OF SUPERVISORS BY DECEMBER 15, 1999 ON FEDERAL, STATE AND LOCAL LEGISLATIVE, REGULATORY, JUDICIAL AND TECHNICAL DEVELOPMENTS AND RECOMMEND A COURSE OF ACTION FOR THE CITY.

**SUPERVISOR KATZ**, YAKI, BECERRIL, BIERMAN, AMMIANO, LENO, NEWSOM, BROWN Teng

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WHEREAS, The Internet is an increasingly important method of communication in our society, and service provided over the Internet constitutes a rapidly growing sector of the economy; and,

WHEREAS, The continued growth of the Internet depends on the development of high-speed broadband networks; and,

WHEREAS, The use of cable modems operating over a cable operator's broadband network is one of the most promising methods of providing high speed access to the Internet for residential customers; and,

WHEREAS, The cable operator in San Francisco, AT&T/TCI, has stated that it plans to offer high-speed broadband Internet access service through cable modems to its subscribers in San Francisco after the San Francisco cable system is rebuilt; and

WHEREAS, The cable company's high-speed cable modem service currently requires that Internet access be provided by one affiliated server, Excite@Home Corporation, affiliated with AT&T/TCI through an exclusive agreement; and,

WHEREAS, AT&T has informed the FCC that where Excite@Home is offered, customers currently have the ability to access any and all content portals, aggregators and on-line service providers on the Internet with a single "click through" from Excite@Home; and,

WHEREAS, Cable companies and providers of high-speed Internet access services should permit unrestricted access to all content on the Internet in addition to allowing subscribers a single click-through directly to such content; and,

WHEREAS, Other providers of broadband Internet access services may also impose exclusive arrangements on their subscribers; and,

WHEREAS, Internet service providers (ISPs) and consumer advocates have protested that those requirements by the cable operator and other providers of high-speed broadband Internet access services may undermine consumer choice, and restrict competition and diversity on the Internet; and,

WHEREAS, On-line service providers have protested that this requirement by the cable operator would allow it to control availability of video transmission form the Internet; and, WHEREAS, Competition in high-speed broadband Internet access is in the initial stages of development and several technologies may successfully compete with high-speed Internet access offered over the cable system; and,

WHEREAS, The FCC has examined the deployment of broadband capability to specific segments of the population, including people in rural and low-income areas, and schools and classrooms, in order to ensure that broadband is being deployed universally to all Americans; and,

WHEREAS, The City and County of San Francisco is committed to ensuring that all communities, irrespective of income, disability, ethnicity, or geographic location, have access to telecommunications technology, including high-speed access to the Internet; and,

WHEREAS, The City of Portland is in litigation with AT&T over the City of Portland's requirement that AT&T provide non-discriminatory access to its cable modem platform to unaffiliated Internet service providers; and,

WHEREAS, The City and County of San Francisco wants to ensure the availability of competitive and diverse high-speed Internet access services and non-discriminatory access to information on the Internet while preserving high quality Internet access service and customer service and to encourage the development of local, on-line businesses, such as ISPs; and,

WHEREAS, The City and County of San Francisco wants to ensure the most competitive prices for service to consumers; and,

WHEREAS, Competition between different delivery systems provides the best options for consumers in terms of price and service; now, therefore, be it

RESOLVED, That the Board of Supervisors of the City and County of San Francisco establishes that it is the policy of the City and County of San Francisco to support open non-discriminatory access to broadband access services and support non-discriminatory access by consumers to all content on the Internet; and, be it

FURTHER RESOLVED, That the Board of Supervisors urges the San Francisco City Attorney, the Department of Telecommunications and Information Services and the Telecommunications Commission to take all possible action to implement this policy at the federal, state, and local level by 1) monitoring legislative, regulatory and judicial developments in the California Legislature, Congress, the Federal Communication Commission and Federal Courts addressing high-speed Internet access; 2) monitoring the market for broadband access services in order to gauge the necessity or feasibility of imposing an open access requirement; 3) requiring cable companies and any other providers of high-speed Internet access services to permit unrestricted access to all content on the Internet in addition to allowing customers a single "click through" directly to such content; 4) requiring cable companies and other providers of high-speed Internet access services to provide universal access by consumers to any cable modem or high-speed Internet access service in a service area in which cable modem or high-speed Internet access service is offered and; 5) filing an *amicus brief* in support of the city of Portland's non-discriminatory access requirement in the United States Court of Appeals for the Ninth Circuit; and, be it

FURTHER RESOLVED, That the Board of Supervisors urges the San Francisco City Attorney, the Department of Telecommunications and Information Services and the Telecommunications Commission to report back to the Board of Supervisors by December 15, 1999 on federal, state and local legislative, regulatory, judicial and technical developments and recommend a course of action for the City.

# City and County of San Francisco

## Tails

## Resolution

City Hall
1 Dr Carlton B Goodlett Place
San Francisco, CA 94102-4689

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**File Number:** 990455 **Date Passed:**

Resolution urging the City Attorney and the Department of Telecommunications and Information Services to monitor legislative, regulatory and judicial developments in the California Legislature, Congress, the Federal Communications Commission and Federal Courts addressing access to high-speed cable and other high-speed broadband networks; to take all possible action to ensure that Congress, the Legislature and/or the Federal Communications Commission adopt policies that protect consumers' access to a choice of Internet and other on-line service providers and to all forms of information over the Internet and over high-speed broadband networks; and to support the authority of cities to require cable companies to provide non-discriminatory access by unaffiliated Internet and other on-line providers to the broadband cable network by filing an amicus brief in support of the City of Portland's open access requirement in the United States Court of Appeals for the Ninth Circuit.

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March 15, 1999 Board of Supervisors — SEVERED FROM FOR ADOPTION WITHOUT COMMITTEE REFERENCE AGENDA

March 15, 1999 Board of Supervisors — REFERRED: Public Utilities and Deregulation Committee

July 6, 1999 Board of Supervisors — CONTINUED

Ayes: 9 - Ammiano, Becerril, Bierman, Brown, Katz, Kaufman, Leno, Newsom, Yaki
Absent: 2 - Teng, Yee

July 12, 1999 Board of Supervisors — CONTINUED

Ayes: 11 - Ammiano, Becerril, Bierman, Brown, Katz, Kaufman, Leno, Newsom, Teng, Yaki, Yee

July 26, 1999 Board of Supervisors — AMENDED, AN AMENDMENT OF THE WHOLE BEARING NEW TITLE

Ayes: 11 - Ammiano, Becerril, Bierman, Brown, Katz, Kaufman, Leno, Newsom, Teng, Yaki, Yee

July 26, 1999 Board of Supervisors — ADOPTED AS AMENDED

Ayes: 11 - Ammiano, Becerril, Bierman, Brown, Katz, Kaufman, Leno, Newsom, Teng, Yaki, Yee

File No. 990455

**I hereby certify that the foregoing Resolution was ADOPTED AS AMENDED on July 26, 1999 by the Board of Supervisors of the City and County of San Francisco.**

Gloria L. Young
Clerk of the Board

AUG - 6 1999

**Date Approved**

Mayor Willie L. Brown Jr.

Before the Department of Telecommunications and Information Services
San Francisco, CA 94103

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# Open Access Comments
# of
# AMERICA ONLINE, INC.

October 27, 1999

America Online, Inc. ("AOL") submits these comments in response to the City's October 4, 1999 Open Access Request for Information ("RFI"). AOL applauds the City for taking this critical step in the implementation of the Board of Supervisors' open access resolution, which wisely supports consumers' freedom to choose their Internet service provider and to access any content they desire – unimpeded by the cable operator. To aid the City in its important efforts, AOL presents the following responses to the questions set forth in the RFI.

## 2. Policy Goals

**Do the two proposed definitions of open access adequately capture the public policy goals stated in the Open Access Resolution? Should the proposed policy apply only to residential services?**

The RFI describes well the important policy goals, benefits, and terms of the Board's open access resolution. The Board's dual goals are, of course, closely related. Ensuring that consumers are able to gain broadband Internet access through the ISP of their choice is, beyond its independent importance, also the most effective means to ensure that consumers are able to fairly access *any* content on the Internet, not merely that which the transport provider favors.

Our suggested rule, set forth in response to Question 3.2, would define open access in terms similar to those proposed by the RFI. Defining "consumers" to include only residential customers, however, would unduly limit the fulfillment of these goals. There is no indication that the Board intended to exclude business consumers from the benefits flowing from competition and choice. Further, the distinction between residential and business customers is difficult to establish in the growing sector of the "Small Office / Home Office" and work-from-

home Internet users. The City should thus ensure nondiscriminatory open access in broadband Internet access for residential and business services alike.

## 3. Non-Discriminatory Access to Broadband Transport Services

### 3.1 Definitions

**Is there any reason that the City should use alternative definitions of broadband provider and broadband?**

While providing a good starting place, the RFI's proposed definition of broadband could nonetheless fail to include systems and services widely considered to constitute broadband even though they may not always transmit data upstream at a rate in excess of 200 kbps. Therefore, as set forth in our proposed rule in the response to Question 3.2, we would recommend that "broadband" be defined simply as "possessing the capability to transmit data at a rate in excess of 200 kilobits per second" – without an added implication that this rate must be achieved both downstream and upstream at all times.

### 3.2 Proposed Rules

**Please provide text of a proposed rule and explain why the proposed approach is superior to alternatives in terms of (1) protecting consumer choice and (2) enforceability.**

Proposed Rule:

*Section 1: Non-discrimination requirements.* Franchisee shall immediately, with regard to this Franchise, provide any requesting Internet service provider access to its broadband Internet transport services (unbundled from the provision of content) on rates, terms, and conditions that are at least as favorable as those on which it provides such access to itself, to its affiliates, or to any other person. Such access shall be provided at any point where the Franchisee offers access to its affiliate. Franchisee shall not restrict the content of information that a consumer may receive over the Internet. The requirements of this provision shall apply to Franchisee and to any other entity to which the Franchise may hereafter be transferred, assigned, granted or which entity may otherwise subsequently exercise rights under the Franchise.

For the purposes of this section, the following definitions shall apply:

(1) ACCESS-The term "access" means the ability to make a physical connection to cable company facilities, at any place where a cable company exchanges consumer data with any Internet service provider, or at any other technically feasible point selected by the requesting Internet service provider, so as to enable consumers to exchange data over such facilities with their chosen Internet service provider.

(2) AFFILIATE-The term "affiliate" means a person who (directly or indirectly) owns or controls, is owned or controlled by, or is under common ownership or control with, another person. For purposes of this definition, the term "own" means to own an equity or other financial interest (or the equivalent thereof) of more than 10 percent or any management interest.

(3) BROADBAND-The term "broadband" means possessing the capability to transmit data at a rate in excess of 200 kilobits per second.

(4) BROADBAND INTERNET TRANSPORT SERVICES-The term "broadband Internet access transport services" means the broadband transmission of data between a user and his Internet service provider's point of interconnection with the broadband Internet access transport provider's facilities.

(5) INTERNET-The term "Internet" means collectively the myriad of computer and telecommunications facilities, including equipment and operating software, which comprise the interconnected world-wide network of networks that employ the Transmission Control Protocol/Internet Protocol, or any predecessor or successor protocols to such protocol, to communicate information of all kinds.

(6) INTERNET SERVICE PROVIDER-The term "Internet service provider" means a person who provides a service that enables users to access content, information, electronic mail, or other services offered over the Internet.

*Section 2: Private Right of Action.* Any Internet Service Provider who has been denied access to a Franchisee's Broadband Internet Access Transport Services in violation of this Ordinance has a private cause of action to enforce its rights to such access.

*Section 3: Enforcement Rights of City and County.* In addition to any other penalties, remedies, or other enforcement measures provided by Ordinance or state or federal law, the City and County may bring suit to enforce the requirements of this Ordinance and to seek all appropriate relief, including, without limitation, injunctive relief.

The above rule is comprehensive, creates clear definitions, establishes express requirements, enables both the City and private ISPs to enforce the provisions, and closely follows the model language endorsed or adopted by other local authorities.

### 3.3 Pricing

**Is it sufficient for the City's open access requirement to state that broadband providers must offer high speed Internet transport services unaffiliated ISPs on the same rates as it offers them to itself and its affiliated ISP(s)? What, if any, role should the City play in enforcing non-discriminatory pricing and resolving pricing disputes between broadband platform owners and unaffiliated ISPs?**

The City's critical and appropriate role is to establish and firmly embrace a meaningful open access policy, not to manage the marketplace. We believe that once such a policy is fully in place, the industry players will negotiate the details to fairly implement open access. The City thus should not have to play an active role in enforcing non-discriminatory pricing or resolving pricing disputes. Rather, the City should simply adopt and rely on a rule that a broadband provider must offer high speed Internet transport services to unaffiliated ISPs on the same rates as it offers them to itself or its affiliated ISP(s). The City's unequivocal commitment to this policy and the resulting public spotlight should offer enforcement enough, and indeed we expect that cable operators will adjust their ways readily once they understand that a closed model for broadband Internet access will not stand. When necessary, the opportunity to seek an injunction or bring a private cause of action would offer a fallback method of obtaining redress.

### 3.4 Business Processes

**Can the City rely on the industry to develop effective business arrangements without intervention?**

The City should rely on industry to develop the business arrangements necessary to implement open access. As suggested above, the City's critical role is to establish an open access policy. Of course, it is implicit in the open access resolution that non-discriminatory access for multiple ISPs extends to all relevant aspects of the technical and operational infrastructure, so that all business system interfaces will be open to all ISPs and performance levels will not favor the affiliated ISP. Once this policy is made clear, the City should allow business negotiations and market forces to resolve implementation issues.

## 3.5 Network Management

**To what extent, if at all, are capacity management issues increased with multiple ISPs using the same shared bandwidth? Will open access degrade performance or limit access to new services? How should the network be managed? Should the City play a role in addressing network management issues?**

As stated above, the City's role is to establish a comprehensive open access policy with an effective enforcement mechanism. Network management issues are best left to the industry players, and the City need not play a hands-on role in this area. The companies involved are in the best position to work out specific implementation issues. This is not to say, however, that a reluctant provider would not have the ability to interfere with the successful implementation of an open access regime. Accordingly, through its enforcement policy if necessary, the City should ensure that the necessary degree of cooperation is achieved.

As various technical analyses and trials demonstrate,[1] there is no technical reason why the City could not adopt an open access policy for multiple ISPs. Bandwidth capacity in the last mile is a function of the number of consumers online and the type of media they are accessing at a given moment. It is entirely independent of the number of interconnected ISPs. Capacity concerns thus are a product of an increase in the number of *subscribers, not the number of ISPs.*

The management of traffic over shared resources has been the common theme of the Internet from its inception. The hybrid fiber coax ("HFC") cable infrastructure is but one more example of shared network platforms that are deployed and managed by multiple parties in the Internet as a whole. It is almost impossible to access any service or content on the web without traversing multiple IP networks over which shared traffic is managed. It is only the lack of willing cooperation that raises issues about the management of shared resources over the cable HFC network.

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[11] *See, e.g.*, Declaration of Albert Parisian, Comments of GTE, CS Docket 99-251 (filed August 23, 1999) (describing the technical feasibility of open cable access); and GTE News Release, June 14, 1999, available at www.gte.com/AboutGTE/NewsCenter/News/Releases/ (describing technical trials in Clearwater, FL). *See also* CRTC News Release, September 14, 1999, available www.crtc.gc.ca/ENG/NEWS/RELEASES/1999/R990914e.htm (describing Canadian authorities' decision to impose open access nationwide).

In addition, one should keep in mind that the DOCSIS cable modem standards provide explicit mechanisms for managing the bandwidth allocated to each subscriber, capabilities that the cable operator will use to properly manage the available capacity regardless of whether there is a single affiliated ISP or multiple ISPs in an open access model.

If cable systems open their networks now, virtually no changes would need to be made to the network infrastructure itself. GTE recently demonstrated the viability of a cable operator enabling multiple ISPs to access its cable system. In recent trials in Clearwater, FL, it made simple modifications to its cable modem platform that enabled three ISPs (AOL, CompuServe and gte.net) to share the cable broadband infrastructure and to obtain direct access to their customers. Mindspring also has reported success on an open access platform, describing its transport arrangement with a cable overbuilder as the kind of transport arrangement that can be done on a non-exclusive basis and serve as a model for an "equal access" requirement for cable operators.[2]

### 3.6 Broadband Marketplace

**Considering all potential revenue streams, including cable, telephone and wholesale Internet access service, to what extent will open access increase/decrease revenues and financial risk? To what extent will an open access requirement to increase/decrease use of an operator's broadband platform?**

Open access will not unduly increase cable operators' financial risk. A nondiscriminatory transport fee set by the cable operator would allow AT&T to recover full transport costs plus profit from each and every interconnecting provider. And AT&T's affiliated ISP would still be free to compete – based on cost and quality – with other ISPs. As Forrester Research observed, "[c]able companies can make money as providers of high-speed access for other ISPs. Instead of gnashing their teeth, large cable operators should make their networks the best transport alternative for providers of all types of telecommunications services."[3] According

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[2] *See* Letter dated Nov. 13, 1998, from Greg Simon, Simon Strategies, to Magalie Roman Salas, Secretary, Federal Communications Commission, in CC Docket No. 98-146.

[3] Christopher Mines & Emily Nagle Green, Forrester Research, Vol. V, No. 22 (Feb. 1, 1999).

to AT&T itself, "the only way to make money in networks is to have the highest degree of utilization."[4] Open access would allow AT&T to do just that, fostering a wholesale broadband transport business that would increase use the cable operator's broadband platform, fuel innovation, and attract additional investments.

### 3.7 Technical Arrangements

**Comment on any way that the City can structure its open access rule to accommodate the development of efficient technical solutions. Provide a description of any planned or completed trials or actual implementation of proposed technical arrangements. Do the trials demonstrate that the proposed technical solution would function in a large cable system with multiple ISPs? Will any proposed technical arrangement decrease the functionality of the cable modem to end users in any way?**

Provided that the City establishes the right policy – allowing the consumer to choose any ISP they want without being required to pay for and go through the cable-affiliated ISP – then there are many technical solutions available to broadband providers, and no need for the City to mandate any particular approach. As noted above, recent technical trials have demonstrate in varied fashion the technical feasibility of open access. And AT&T's recent comments regarding its willingness to enter into multiple, non-exclusive ISP arrangements at the expiration of existing exclusive contractual agreements vividly demonstrates that it is not technical issues, but business models, that pose an obstacle to open access.

Internet access over an HFC plant works basically the same way as cable television, except that, instead of video program delivered to a television, it is Internet Protocol (IP) packets that are being delivered to a cable modem. At the cable headend a cable modem termination system routes the IP traffic to and from the HFC network to the wide area network. The DOCSIS IP network is a combination of network elements (and associated software) that is overlaid on the physical HFC plant. The solutions to support multiple ISP over HFC cable broadband networks must ensure that the IP traffic be directed appropriately to each one of the multiple ISPs. When the upstream IP traffic from an end-user's cable modem reaches the cable

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[4] Federal Communications Commission, *Telecom Mergers: En Banc Hearing* (Oct. 22, 1998) ("FCC Mergers Hearing").

head end, the IP packets must be sent to the corresponding ISP depending on the originating customer. Similarly, the IP traffic coming from the Internet at large must be delivered to the correct cable modem. There are at least three possible network designs that allow for open access. These include:

- Policy-based routing, which routes packets to the appropriate ISP using the source IP address as the unique identifier;

- Virtual private networks (VPNs) and IP tunnels, which create virtual dedicated connections over the HFC network between the customer and the ISP (a solution appropriate to routed (layer 3) access networks); and

- Point-to-Point Protocol over Ethernet (PPPoE) encapsulation, which is a protocol analogous to commonly employed designs for dial-up (a solution appropriate to bridged (layer 2) access networks).

Each of these options has its own unique set of advantages and disadvantages. The appropriateness of each option varies depending on the type of cable system (i.e., large or small, multiple nodes vs. single node) and the networking architecture being addressed. It is important to emphasize that these different solutions are all based on existing industry standards, using off-the-shelf equipment from several networking vendors. The technical specifics of an open access solution do not require *any changes* to the existing DOCSIS standards or to the functionality of the cable modem equipment.

Of course, allowing a single entity to abuse its control over the development of technical solutions – particularly when it may have interests inconsistent with the successful implementation of open access – could indeed undermine the City's policy. It is therefore vital to ensure that unaffiliated ISPs can gain access comparable to that the cable operator chooses to afford its cable-affiliated ISP. It then would be a straightforward process for the network engineers from the cable operator and the multiple ISPs to define the specific open access solution preferable in San Francisco.

### 3.8 Interconnection

**Does the way the City structures its open access requirement have any implications for interconnection arrangements? Should the City require interconnection at any point chosen by the unaffiliated ISP or require interconnection only at the same point that the broadband facility provider interconnects with affiliated ISPs? Are various methods of interconnection compatible? Will the method of interconnection have implications for the types of service that an ISP can offer its subscribers? Should the City play any role in monitoring the development of interconnection or collocation solutions or resolving disputes concerning interconnection or collocation? Should the City play a role in resolving disputes concerning collocation of the equipment of unaffiliated ISPs on a cable operator's property?**

There are many possible points at which multiple ISPs could interconnect with the broadband transport provider, as previous FCC submissions have demonstrated.[5] While the exact manner should be left up to the parties, the City can set a clear standard as to what is required of the transport provider — without eliminating any technically compatible alternative. At a minimum, the City should require nondiscrimination; the broadband transport provider must offer interconnection at any point or points where the Franchisee offers access to its affiliate ISP, and on interfaces that provide equivalent performance and functionality. It is important to confirm that the cable operator must provide equal treatment for local content serving (caching or replication) that the affiliated and nonaffiliated ISPs can provide; specifically, no firewalls, protocol masking, extra routing delays or bandwidth restrictions may be imposed in a discriminatory manner.

## 4. Access to Content Over the Internet

**How well will measures such as a "single click through" requirement or a "carrier hotel" arrangement protect citizens' access to information over the Internet?**

**How can the City address the concerns regarding restrictions on access to certain types of content, such as video streaming, or certain types of uses of high speed Internet services? Do some of the restrictions perform a network management function? If so, could the same network management function be accomplished in a less obtrusive way? To what extent do to the alleged "content bias" associated with Excite @ Home's**

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[5] *See, e.g.*, Declaration of Albert Parisian, Comments of GTE, CS Docket 99-251 (filed August 23, 1999).

**implementation of network performance features exist? What role should the City play to mitigate these problems?**

A "single click through" arrangement will not achieve the City's policy goal of nondiscriminatory access. Aside from the fact that consumers would still need to pay for the cable-affiliated ISP, merely adding an icon to a consumer's desktop would not prevent the transport provider from remaining a bottleneck through which all content would need to travel to reach the consumer. The transport provider still could discriminate against non-affiliated products or providers by slowing sites' downloading speeds or refusing to let them cache on the affiliated ISP's server, excluding disfavored sites from appearing on the affiliated portal, or even restricting customers' access to certain content. Only the ability to choose among a variety of Internet service providers will guarantee that consumers will be able to access the Internet content of their choice.

[In a last-mile shared environment, proper network and bandwidth management might possibly require certain limitations on data transmission. However, content- or service-specific restrictions can be both over- and under-inclusive — and, most of all, anti-consumer. Limitations on video streaming, for example, protect cable's traditional video programming distribution business. As TCI admitted early on, its 10-minute cap is a "restriction which we imposed on @Home so that we were the determiner of how stream video worked in our world . . . . [and] so that [we] determined [our] future in the area of streaming video."[6] Any legitimate network management policies must be free of such anticompetitive intent and effect.

Still, network management is ultimately a matter which industry can and should readily resolve. The City's role, as stated above, is to embrace and give full effect to an ordinance that prohibits providers from discriminating against unaffiliated ISPs or content providers. Industry and market forces will best determine exactly how such open access should be implemented. Indeed, these implementation issues could already have been long resolved if cable operators

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[6] FCC Mergers Hearing.

were not still hoping to convince policymakers that spurring the deployment of broadband somehow requires sacrificing the essential openness of the Internet itself.

* * *

We would be happy to provide any additional information or assistance you might need. Please contact:

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**AMERICAN LUNG ASSOCIATION.**
*of San Francisco & San Mateo Counties*

October 27, 1999

San Francisco City & County Department of Telecommunications
875 Stevenson St.
San Francisco, CA 94103-0948

Re: Open Access

As the Executive Director of the American Lung Association I am writing to you regarding the telecommunications open access issue. While at first, this issue may not appear to of concern to the American Lung Association, I can assure you it is.

We are the public health voice in the air quality arena. We have been dedicated to promoting air quality for over 20 years because we know the devastating impact air pollution has on lung health.

Lung disease is the third leading cause of death and the fastest rising in our country. Studies have shown direct links from increases in ozone to the increase in respiratory related deaths and hospitalizations.

The American Lung Association is interested in supporting any measures that will reduce air pollution. Reduction of vehicle trips through telecommuting can significantly improve our air quality.

We are concerned that control of customer choice by any one internet access provider may ultimately lead to increased costs and reduce the instances of telecommuting, increasing on road travel and pollution.

Please, as you review this issue, give every consideration to policies that will positively impact air quality and lung health.

Sincerely,

Linda Civitello-Joy
Executive Director

lindacj@alasfsm.org

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## FAX MEMO

October 27, 1999

Open Access Comments
Department of Telecommunications
875 Stevenson St.
San Francisco, CA 94103

Dear Sirs:

Arriba Juntos, a stellar community non-profit agency serving low-income residents of the City and the Mission District, that has an open-access community technology center affiliated with numerous other not-for-profit agencies, wishes to openly and strongly support the City's effort in keeping the Internet open and competitive for all residents of San Francisco.

Why re-invent the wheel? The model services developed by the City of Portland/Broward County/and Fairfax County are also stellar. I recommend that you utilize their protocols in developing our policies for San Francisco.

Sincerely,

David Ocegueda Bracker
Executive Director

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# COMMENTS OF AT&T CORP. AND TELEVISION SIGNAL CORPORATION IN RESPONSE TO "OPEN ACCESS REQUEST FOR INFORMATION"

## CITY OF SAN FRANCISCO DEPARTMENT OF TELECOMMUNICATIONS AND INFORMATION SERVICES

October 27, 1999

Coblentz, Patch, Duffy & Bass, LLP
222 Kearny Street, 7th Floor
San Francisco, CA  94108

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## INTRODUCTION

AT&T Corp. and Television Signal Corporation ("AT&T"), respectfully submit the following comments in response to the Department of Telecommunications and Information Services' ("DTIS") "Open Access Request for Information" ("RFI") dated October 4, 1999.

By Resolution Number 718-99 ("Board Resolution"), the City and County of San Francisco ("City") adopted a policy "supporting open non-discriminatory access to broadband access services and non-discriminatory access to all content on the Internet." The Board Resolution also directs DTIS to "monitor the market for broadband access services in order to gauge the *necessity* or feasibility of imposing an open access requirement" (emphasis added). AT&T applauds the careful, reflective approach which is evidenced by the Board's Resolution, emphasizing the threshold question of whether an open access requirement is necessary.

Under the heading "Policy Goals," the RFI invites comments addressing how the City can craft an effective open access requirement, keeping in mind the "twin aspects of open access" identified in Resolution 718-99: (a) non-discriminatory access to broadband transport services; and (b) non-discriminatory access to content on the Internet. In Part One of these comments, AT&T will address that general topic, including whether there is any need for regulation, the scope of any such regulation, the appropriate definitions for the market, the providers, and "broadband." Although AT&T believes that a policy of vigilant restraint will best serve the people of San Francisco, in response to the RFI, AT&T suggests that the City of San Francisco adopt a regulatory statement. In Part Two of this document, AT&T will respond to the remaining specific questions and issues in the RFI.

It is competition, not regulation, that provides the best hope for widespread, non-discriminatory access to affordable high-speed Internet services for San Francisco consumers. The City must reject the highly misleading catch phrase "open access" and must not be confused by the claims of AT&T's competitors such as SBC, GTE, America Online ("AOL") and other incumbent ISPs. To achieve the City's goal, the City must encourage, not impede, the deployment of facilities and services by AT&T. Consumer

preferences should establish competing business models and technologies and, ultimately, establish winners and losers in the marketplace.

It perhaps should not be surprising that the incumbent monopoly local telephone companies have seized upon pro-consumer rhetoric in support of local government regulation to delay competition and limit consumer choices. Although the position of the local telephone companies is nominally about cable modem service, their true agenda is to interfere with and delay AT&T's efforts to compete for local telephone service. Three years have passed since the Telecommunications Act of 1996 was passed and the clear majority of residential and business customers still have no option for local telephone service. Consumers have lost as a result of the open access debate because the rollout of competitive local telephone services and new innovative cable-based services has been delayed.

In the materials that follow, AT&T intends to shatter the "open access" myths. While the rhetoric of the phone companies, and their ally, AOL, is designed to confuse, the salient facts are simple:

- AT&T's cable modem service is not a monopoly but instead is only one of several competing technologies in the evolving Internet access market.
- Cable ISPs will not control Internet content. Cable ISPs provide open access to all Internet content including the content of all competing online services providers ("OSP").
- Cable customers will not have to pay twice. It is only AOL's unique business model that imposes separate charges for customer services, content and e-mail. Thus, AOL's "pay twice" claims are self-inflicted.
- Not only would an unbundling requirement be contrary to federal law, carrying multiple ISP services over cable's shared bandwidth facilities presents significant technical challenges.
- "Open Access" advocates are simply wrong when they suggest that multiple ISP services over cable shared bandwidth is easy. It is a fact that no proven scaleable solution exists today.

In short, while San Francisco has a salutary interest in ensuring that its citizens have a wide choice of high-quality Internet services, offered at affordable prices, there is every reason to believe that the marketplace will generate those choices on its own, with efficiencies and innovations that government regulation cannot emulate.

# PART ONE: A POLICY OF CONSUMER DRIVEN COMPETITION WILL BEST SERVE SAN FRANCISCO'S GOAL OF MAXIMIZING CONSUMER ACCESS TO HIGH-SPEED INTERNET SERVICE AND INTERNET CONTENT

## I. COMPETITION WILL MAXIMIZE CONSUMER ACCESS TO HIGH-SPEED INTERNET SERVICES AND TO INTERNET CONTENT IN SAN FRANCISCO

### A. AT&T Shares San Francisco's Goal of Non-Discriminatory Access By Consumers to High Speed Internet Services and Internet Content

AT&T shares San Francisco's goal of accelerating the deployment of high speed Internet access facilities and maximizing competitive opportunities for San Francisco consumers to access the Internet. The best way to accomplish that goal is not by regulation, but by fostering an environment that encourages investment and risk-taking by private sector companies that are highly motivated to compete for the attention of consumers. Just such an environment exists in San Francisco today. Numerous large and well-funded companies are aggressively investing in high-speed facilities and providing high-speed services to San Francisco consumers, including AT&T, other cable operators, GTE, Teligent, Qwest, Pacific Bell ("PacBell"), and PacBell's parent, SBC. In particular, SBC recently announced its plan to invest over $100 million to upgrade PacBell's broadband DSL technology. On October 18, 1999, SBC announced that it will spend $6 billion over three years on broadband services, including providing over 80% of its combined territory with Ameritech, or 77 million homes, with DSL Internet access. Right now, about 6 million PacBell customers have access to DSL in California, 2 million of them in the Bay Area.[1] One senior SBC official noted earlier this year that the company's DSL rollout "positions [SBC] to win the availability race with cable modems."[2]

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[1] "Cable Modems, DSL Offers Choices for High-Speed Net Access," *San Francisco Chronicle*, Oct. 26, 1999, at D2.

[2] *SBC Seeks to Dominate High-Speed Web Access*, Reuters (Jan. 12, 1999), available in LEXIS-NEXIS Library, Reuters file.

Many companies are motivated to invest in the market for high-speed Internet access, which will lead to lower prices, improved technology, better customer service, an explosion of innovative and diverse new services, and the development of creative, consumer-friendly ways to package those services.[3] There is no reason for San Francisco to disrupt this pro-investment, pro-consumer environment by imposing far-reaching, utility-type regulations on cable operators.[4] Facing the same issue, the City of Los Angeles Information Technology Agency reached the conclusion that "the problems that open access addresses should be better resolved by less costly and intrusive measures than open access and by a competitive marketplace."[5] As noted by the FCC staff in its recent report:

> [O]ur findings support a continued policy of regulatory restraint to facilitate the rapid deployment of multiple broadband technologies, including cable, DSL, wireless and satellite. Unless and until anti-competitive behavior surfaces, it is preferable to allow market forces to propel cable operators and independent ISPs toward an 'open

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[3] See *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct. 1999), at 42.

[4] The benefits of a deregulatory approach to the Internet have been widely recognized. For example, Congress endorsed and codified it in the Telecommunications Act of 1996: "It is the policy of the Unites States to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, unfettered by Federal or State regulation . . ." 47 U.S.C. § 230(b)(2) (emphasis added); see also 47 U.S.C. § 230(a)(4) ("The Internet and other interactive computer services have flourished, to the benefit of all Americans, with a minimum of government regulation."). Likewise, the Administration and the Federal Communications Commission ("FCC") also have acknowledged the benefits of an unregulated Internet. See U.S. Government Working Group on Electronic Commerce, First Annual Report, at 5, Nov. 1998 (stating that the Clinton Administration strongly advocates that the Internet be "self-policed" by those in the industry); Statement of William E. Kennard, Chairman of the FCC, Before the United States Senate Committee on the Judiciary, Subcommittee on Antitrust, Business Rights, and Competition, 1999 FCC LEXIS 753 (Feb. 25, 1999) ("The Internet is a testament to a wise regulatory policy: don't regulate unless there is a clearly demonstrable need to do so. The reality is that something as dynamic and revolutionary as the Internet probably can't be regulated and, unless and until there is a demonstrable market failure affecting the general public, we should resist calls to regulate it.").

[5] Broadband Access Report, City of Los Angeles Information Technology Agency (June 1999), at 3. The Los Angeles ITA, like the DTIS, reviews cable television issues. Notably, the ITA held multiple hearings, consulted with experts across the country, and devoted six months to intensive analysis in order to separate fact from slogan in this highly charged controversy.

> access' system. Market-based solutions devised by the parties will likely provide a better framework for consumers.[6]

Cable has no market power that could justify intrusive regulations — cable operators have less than 2% of the Internet access market.[7] It is unlikely that cable will ever develop such power: "As deployment of DSL, satellite, and wireless advance, in large part spurred by rapid cable deployment, consumers will have alternative platforms to use for high-speed data access, telephony and video services."[8] Accordingly, in attempting to "gauge the necessity or feasibility of imposing an open access requirement,"[9] the City must recognize that AT&T and a host of other companies are responding aggressively to consumer demand for high-speed Internet access, and the result is a competitive market that maximizes consumer choice, technological innovation, and value.

### B. The Free Market For High-Speed Internet Access Is Open And Intensely Competitive, And Benefits Consumers

The hands-off approach to regulation of the Internet has triggered enormous private sector investment, astonishing advances in technology, and innovative and diverse new services. Cable modem services help promote that open environment.

Cable unbundling, or "open access," however, would do just the opposite. Proponents of unbundling, such as rival access providers and ISPs, are seeking preferential treatment, a type of "forced access or carriage," by which cable operators would be required to carry these competitors' content and services (along with their

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[6] *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct. 1999), at 43.

[7] By contrast, AOL serves approximately 63% of the Internet services market (including its affiliate, CompuServe's, 1.7 million customers).

[8] *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct. 1999), at 42. "Competition from multiple broadband providers is seen as the best way to prevent a monopoly by one provider." Id. at 15.

[9] Resolution No. 718-99, Board of Supervisors file 990455 (July 26, 1999).

marketing and pricing strategies) whether or not they are optimal for AT&T or consumers (which seems unlikely). As a practical matter, cable operators would have to dismember their cable distribution systems in order to provide such forced access, at great difficulty and expense.

Another major danger of local regulation of broadband access is the threat of disruption to national broadband policy: "Inconsistent local regulation potentially can disrupt the [Federal Communications] Commission's national broadband policy and keep broadband technologies out of the hands of many Americans."[10] And the consequences could be serious: "The notion of applying prophylactic 'open access' measures . . . before fuller development of the broadband industry would be unsound public policy that could have the unintended effect of impeding the rapid development of this industry."[11] In fact, the FCC praised San Francisco for pursuing a policy of monitoring and restraint.[12]

Cable operators are new entrants in the Internet services business. Well over 28 million of the nation's 100 million homes subscribe to an Internet service provider.[13] Cable operators, including the @Home and Road Runner services, served about 600,000 — or only 2% — of these customers at the end of last year.[14] In comparison, AOL is, far and away, the largest access provider, with over 17.6 million customers — 63% of the total market — followed by the Microsoft Network with roughly 1.7 million customers.[15] Local and long-distance phone companies also provide Internet access to

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[10] *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct. 1999), at 43.

[11] Id. at 44.

[12] Id.

[13] See Chris O'Malley, *No Waiting on the Web*, Time, at 76, Nov. 16, 1998.

[14] See Fred Dawson, *Ops Dilemma: Get More Out of Pipes*, Multichannel News, March 15, 1999 (citing recent estimate of Cable Broadband Forum).

[15] See *Consumer Internet Service Providers Post Solid Subscriber Growth in 1998*, Electronic Information Report, Jan. 15, 1999.

approximately 4 million subscribers.[16] Cable operators' small share of the Internet access business is expected to lag behind other providers for the foreseeable future.

Although some argue that regulators should consider "broadband" Internet access separately, in fact, narrowband services compete directly with broadband and other high speed Internet access services.[17] Thus, the relevant market is not "broadband" or "high speed," but "Internet access." Indeed, narrowband providers today account for about 98% of the Internet access market. Where AOL and @Home are offered in the same markets, millions of customers that are able to access the Internet via cable have chosen narrowband access instead.[18] Narrowband is expected to remain the dominant form of Internet access for some time.[19]

Moreover, if the high-speed market is assessed separately, numerous entities are providing and investing in high-speed facilities, thus guaranteeing a competitive environment.[20] AT&T's competition comes from other cable operators, from incumbent local exchange carriers ("ILECs"), competitive local exchange carriers ("CLEC"),

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[16] See id.

[17] The FCC believes that narrowband will remain the principal means of accessing the Internet for the near term. See *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct. 1999), at 23.

[18] While broadband facilities provide data transmission speeds that exceed those obtained over traditional narrowband phone lines, some customers may choose to retain narrowband access because it is generally less expensive, uses existing customer premises equipment, and allows for other traditional uses, such as voice and fax.

[19] Steve Case, Chairman of AOL, was quoted last year as saying that, even five years from now, "seventy-five percent of the [Internet access] market will be narrowband." See Interview with Steve Case, *Power Lunch*, CNBC (broadcast Sept. 28, 1998). "The mass market will continue to adopt the narrowband service as the entry point because it will be easier to install and less expensive to use. Some of these customers, maybe 25 percent, will pay extra for faster service. Broadband will be like first class is to the airlines." Steve Case, AOL (cited in *Electronic Media*, 11/9/98). **According to the FCC, "[e]ven the most optimistic estimates predict that narrowband will still be the dominant subscribed form of Internet access by 2005."** *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct. 1999), at 32.

[20] See AT&T/TCI Merger Order, CS Docket No. 98-178, FCC 99-24 (rel. Feb. 18, 1999) at ¶ 94 ("[E]ven if broadband Internet access were deemed to constitute a separate market from dial-up Internet access services, AT&T is not a more likely entrant than AOL or other leading ISPs (including the incumbent LECs, which have facilities of their own) that are currently providing services using narrowband transmission.") ("AT&T/TCI Merger Order"). .

wireless and satellite providers, and utility companies, all of which are investing billions of dollars in high-speed facilities. "'AT&T, Sprint, MCI and a slew of upstarts are all saying "we have to build out an infrastructure that can provide all these services like Internet access and multimedia."'"[21]

The San Francisco high-speed market, in particular, is highly competitive. Earlier this year, for example, AOL announced that it had entered into an alliance with SBC, PacBell's parent company, to provide broadband access to AOL's customers.[22] This follows SBC's announcement in January that it would invest more than $100 million to upgrade PacBell's DSL technology and equip 255 central offices with the service.[23] PacBell estimates that as many as 5 million residential and 900,000 business customers will qualify for DSL service from those central offices.[24] The company now offers DSL service in San Francisco and most other cities in California,[25] and is reported to be signing up 1,500 new DSL subscribers per week in the state.[26] Qwest, a major long distance and broadband provider that recently announced plans to acquire US West, is now offering DSL service in San Francisco and other Bay Area cities.[27] Qwest

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[21] "One Home, One Link," *San Francisco Chronicle*, Oct. 26, 1999, at D6, quoting Matt Barzowskas, vice president of FAC Equities in Boston.

[22] See *America Online and SBC Communications to Offer High-Speed Upgrade to AOL Members* (accessed Mar. 17, 1999) <<http://www.sbc.com/News>>.

[23] See *Got Bandwidth? Pacific Bell Answers California's "Need for Speed" with $39 DSL Service, Major Availability* (accessed Mar. 3, 1999) <<http://www.sbc.com/PB/news>>. PacBell's DSL access rates range from $39 per month to $129 per month, depending upon the speed of the connection.

[24] See id.

[25] See *Find Out if DSL is Available in Your Area* (accessed Oct. 14, 1999) <<http://sw10.pacbell.com/ADSLPROD>>(listing San Francisco as a city where PacBell's FasTrak DSL service is now available).

[26] See *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission*, Cable Services Bureau, FCC (Oct. 1999), at 57. n. 83. PacBell's goal is to make DSL service available to every one of its customers. See "Cable Modems, DSL Offer Choices for High-Speed Net Access," *San Francisco Chronicle*, Oct. 26, 1999, at D2.

[27] See *Qwest Launches Digital Subscriber Line Service; Company Business and Marking*, Cambridge Telecom Report (Aug. 9, 1999) (noting that Qwest's DSL service packages are priced at flat rates starting at $49.95/month for consumers and $119.95/month for businesses). On October 21, 1999,

*(footnote continues on next page)*

and a variety of other companies (e.g., Global Crossing, Level 3) are constructing advanced networks that will transmit voice and data over the Internet.[28] Likewise, Sprint, the third largest long distance provider in the country, is deploying its ION high-speed Internet access and telephone service throughout the country, and recently announced plans to offer its high-speed service via fixed wireless devices.[29] MCI WorldCom, which recently announced a merger with Sprint, also offers DSL services to residential and business customers in San Francisco, both directly and through third-party ISPs.[30]

In addition, many national and regional ISPs serving San Francisco have signed on with large phone companies and smaller CLECs to provide high-speed service to the Bay Area. Earlier this month, Earthlink, the second largest ISP after its recent merger with MindSpring, announced that it will partner with PacBell to offer its Earthlink DSL service in San Francisco next month.[31] GST Telecom, a regional ISP, and Verio and Concentric Network, two small-business-oriented ISPs, are all providing DSL service in the Bay Area through various arrangements with DSL wholesalers, NorthPoint and Covad.[32] Rhythms NetConnections, a CLEC focused on DSL service to the business

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Qwest announced that it will launch its end-to-end local access program in four California cities early next year, giving Qwest customers direct access to Qwest's nationwide fiber-optic network, bypassing the local telephone network completely.

[28] "One Home, One Link," *San Francisco Chronicle*, Oct. 26, 1999 at D6.

[29] See *Sprint Closes Acquisition of American Telecasting Inc.; Transaction Provides Fixed Wireless Access to 55 Markets*, PR Newswire (Sept. 23, 1999) (noting that San Francisco is one of the markets covered by fixed wireless broadband services); Elizabeth Douglass, *Sprint's Next Big Gamble: Company Preparing Integrated On-Demand Network to Handle Voice, Data and Internet on Single Connection*, Sept. 20, 1999, at C1 (noting national rollout plans for ION service).

[30] See *MCI WorldCom Takes DSL Nationwide*, MCI Corporate Press Release, Nov. 18, 1998, (accessed Oct. 14, 1999) <<http:www.wcom.com/about_the_company/press_releases>> (noting deployment in San Francisco and other major markets).

[31] See Ken Woo, *EarthLink First to Launch National DSL Internet Service*, Newsbytes, Oct. 7, 1999. EarthLink will provide its DSL service at $49.95 per month. See *EarthLink Sprint DSL is Available in Selected Markets Nationwide* (accessed Oct. 14, 1999) <<www.earthlink.com/dsl>>.

[32] See *GST Telecommunications: Covad to Deliver Voice/Data Via DSL*, Tele-Service News, Sept. 1999 (noting GST's successful completion of DSL service trials with Covad in the San Francisco Bay Area); Elizabeth Clampet, *Covad Offers Home DSL Service*, InternetNews.com, April 20, 1999 (noting

*(footnote continues on next page)*

community, also operates in San Francisco.[33] NorthPoint is similarly partnering with DSL equipment providers, such as Copper Mountain, to deliver DSL services to small office buildings and apartment buildings,[34] and with PacBell to deliver IDSL to consumers who live within 6 miles of a PacBell central office.[35]

On the wireless front, Concentric offers high-speed wireless service in San Francisco through its affiliation with Wavepath, the Bay Area's leading high-speed wireless Internet connectivity company.[36] Teligent, a major national wireless provider, also offers high-speed Internet service throughout the Bay Area.[37] WinStar, a wireless provider specializing in high-speed services to small and medium-sized businesses, recently signed agreements with Tishman Speyer Properties to offer high-speed wireless access to commercial properties in San Francisco and other markets.[38] In addition, NextLink, the largest holder of LMDS spectrum in North America, with licenses covering 95% of the population in the top 30 markets in the United States, plans to offer commercial high-speed wireless service in the Bay Area and elsewhere by the end of

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that Verio and Concentric Network are offering Covad's TeleSurfer DSL service in San Francisco); Patricia Fusco, *Verio Joins with NorthPoint to Expand DSL Services*, InternetNews.com, April 1, 1999 (noting that Verio/NorthPoint have offered DSL services in San Francisco since February). Concentric Network's DSL service starts as low as $69 per month, including all circuit and Internet charges. See *Concentric Network Delivers DSL Service to Dallas and Houston*, PR Newswire, Aug. 17, 1999.

[33] See *Rhythms NetConnections and Ramp Networks Partner to Deliver DSL Services for Small Offices*, PR Newswire, Sept. 14, 1999 (noting DSL service in San Francisco).

[34] See Mark Rockwell, *Alternative Lifestyle: Copper Mountain Helps Service Providers See the World Beyond ADSL*, Jan. 4, 1999.

[35] "Cable Modems, DSL Offer Choices for High Speed Net Access," *San Francisco Chronicle*, Oct. 26, 1999, at D2.

[36] See *Concentric Offers Risk-Free Guarantee to Wireless Customers*, PR Newswire, April 1, 1999.

[37] See *Teligent Levels the Playing Field for Small and Mid-Sized Businesses in Charlotte, Nashville, and Portland*, Business Wire, Oct. 13, 1999 (noting existing service in San Francisco, Oakland, and San Jose).

[38] See *WinStar Signs Agreement with Tishman Speyer Properties to Offer Broadband Communications Services to Tenants Worldwide*, Cambridge Telecom Report, Sept. 20, 1999 (noting WinStar's services in San Francisco).

next year.[39] Finally, DirecPC, a high-speed, satellite-delivered Internet service, is available in San Francisco and throughout the country.[40]

Cable overbuilders are also building facilities to compete directly with AT&T and others for the delivery of high-speed services. RCN is currently laying its high-speed lines in the San Francisco-to-San Diego corridor, and plans to offer cable, phone, and Internet services to San Francisco residents by the end of this year.[41] RCN has raised $4.6 billion in the last two years for this build-out effort.[42] Seren Innovations, another national cable overbuilder, is also constructing high-speed plant in the East Bay, and plans to start offering bundled cable, Internet, and phone services beginning this December.[43]

Furthermore, San Francisco boasts more regional, specialized, and niche ISPs than nearly any other area in the country. There are over 900 ISPs that provide Internet access services in the greater San Francisco area, including dozens of smaller ISPs

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[39] See *NextLink Turns on Detroit, Houston, and San Francisco Networks; Continues to Aggressively Launch High-Capacity Broadband Networks Across the* United *States*, NextLink Press Release, Sept. 1, 1999 (accessed Oct. 14, 1999) <<http://www.nextlink.com/ra/news>> (noting completion of deployment of fiber network in South Bay, and plans to rollout wireless service next year). NextLink is also considering using its fiber network to offer DSL services to residential customers located in multiple dwelling units. See Karen Rodriguez, *NextLink Communications Ready to Surround Bay Area*, Business Journal-San Jose, Sept. 10, 1999.

[40] See David Einstein, *Satellite Dish Can Access Both TV, Internet*, San Francisco Chronicle, Sept. 23, 1999, at B3.

[41] See *RCN Corporation Accelerates Plan to Serve California Residents, Receives Critical Approval from San Francisco*, RCN Press Release, March 31, 1999 (accessed Oct. 14, 1999) <<http://www.rcn.com/investor/press>>. RCN charges $39.95 per month for cable modem speed with existing RCN cable service. See *Cost and Speed: Cable Modem FAQs* (accessed Oct. 14, 1999) <<http://www.rcn.com/Internet>>.

[42] This amount includes a recent investment of $1.65 billion from Microsoft co-founder and current Charter Communications Chairman Paul Allen. See *Paul Allen Invests $1.65 Billion in RCN Corporation*, RCN Press Release, Oct. 4, 1999 (accessed Oct. 14, 1999) <<http://www.rcn.com/investor/press>> (noting that RCN business plan is fully funded through 2003).

[43] See *State and Local Actions*, Warren's Cable Regulation Monitor, Sept. 27, 1999 (noting that Seren aims to start offering service in Concord, California in December, and recently received a franchise to provide service in Walnut Creek, California).

that now offer DSL service to business and residential customers.[44] These ISPs have now and will continue to have many access options for customers who desire high-speed Internet service, although, according to analysts, most customers will continue to opt for dial-up or narrowband service. Therefore, even without access to the cable distribution system, these ISPs will be able to thrive and continue to grow their revenues.

It is apparent that deployment of cable modem services has spurred competition, which ultimately benefits consumers by creating options and lowering prices.[45] There is no reason to single out cable operators for burdensome and costly common carrier-type regulation, particularly given the effect of such regulation on investment in technology and service innovation. As observed by the County Executives of America in a recent resolution:

> High-speed services are at an early stage of development and deployment, and government should not slow the proliferation of these services by encumbering high-speed providers with restrictive and burdensome regulations. Such encumbrances could deter future investments in high-speed services. The County Executives of America favor a competitive environment to promote the deployment of high-speed technologies that will give consumers more choices and flexibility to select a technology that fits their daily needs.[46]

Not only is the local San Francisco market highly competitive, the national market for high-speed services is experiencing equally aggressive competition.[47] For example,

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[44] See *List of ISPs Serving the 415 Area* Code (accessed Oct. 14, 1999) <<http://thelist.Internet.com/areacode/415>>.

[45] See Broadband Access Report, City of Los Angeles Information Technology Agency (June 1999), at 14.

[46] Press Release, "County Executives of America Oppose Government Regulation of Broadband Internet Services," Oct. 7, 1999. (Appendix C.)

[47] See Section 706 Report, CC Docket No. 98-146, FCC 99-5 (rel. Feb. 2, 1999) at ¶ 35 ("Publicly available data show that many companies in virtually all segments of the communications industry have made tens of billions of dollars of investment in broadband facilities. These sums are large even by the standards of America's communications business.") ("Section 706 Report").

local exchange carriers ("LECs") have announced plans to offer their DSL high speed service to approximately 20 million homes this year.[48] Satellite providers, including Hughes, Loral, and Teledesic, will spend an estimated $65 billion over the next five years to fund the next generation of satellites, including high speed satellite systems. CLECs have raised between $15 and $20 billion to invest largely in high-speed systems. Public utilities already pass an estimated 122,000 homes with advanced fiber, and are aggressively marketing their Internet services in Washington, D.C., San Francisco, and other communities around the country.[49] Within a few years, there will be several fixed wireless companies that will be offering high speed access.[50] In particular, Teligent, a major wireless provider of broadband communications services, intends to spend $300 million on capital outlays as it works toward its goal of launching high-speed service in a total of 40 markets by the end of the year.[51]

The telcos' recent significant investments in DSL high speed technology has been spurred largely by the investments of cable operators in broadband facilities: "[C]able broadband rollout has spurred the deployment of digital subscriber lines (DSL), the telephone platform for broadband services."[52] "[P]rior to cable modem deployment,

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[48] See Section 706 Report, at ¶ 42. Cable Internet service, in contrast, is now available in only 15 million households. Chris O'Malley, *No Waiting on the Web*, Time, Nov. 16, 1998, at 76. And various telecommunications providers, from ILECs to CLECs, "recently have adopted aggressive deployment schedules for DSL." *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct. 1999), at 27.

[49] See Section 706 Report, at ¶ 55.

[50] *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct. 1999), at 29.

[51] See *Teligent Reports 1998 Financial Results, Sets Operating Benchmarks for 1999*, Business Wire, Mar. 1, 1999. Winstar, another wireless provider, recently announced a $2 billion network equipment financing agreement with Lucent Technologies. See D. O'Shea, *The Wireless Local Access Pioneer Copes with a Quickly Competitive Market*, Telephony, Jan. 25, 1999, at 55.

[52] *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct 1999), at 9. As the FCC noted in its Section 706 Report, "It is widely believed that incumbent LECs' recent moves to offer broadband to residential customers are primarily a reaction to other companies' entry into broadband." Section 706 Report, at n. 84 (citations omitted). The maps included in Appendix A illustrating the progression of investment in broadband by cable and ADSL providers demonstrate this point.

the ILECs had little incentive to deploy DSL and the consumer had no choice for high-speed Internet access."[53] Removing the threat of competition would undo that progress, to the detriment of San Francisco consumers,[54] and ultimately discourage independent investment in broadband facilities.[55]

The competitive nature of the Internet access market negates any economic basis for forced unbundling. As Joseph Farrell, Professor of Economics at the University of California and former chief economist of the FCC, has concluded, unbundling may be appropriate in a particular case if it protects or creates competition in the use of the unbundled facility, which may, theoretically, open up a bottleneck.[56] Professor Farrell explains, however, that this rationale only applies where an incumbent provider is highly motivated to maintain a monopoly for the facility. Professor Farrell concludes that such a rationale is not applicable here because there is no monopoly in

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[53] *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct 1999), at 27.

[54] "[T]he telcos would like nothing more than to go back to half-heartedly hawking ISDN for a prince's wages, if only this evil threat of actual competition were removed." J. Fry & M. Doscher, "Two Fears Are Key Factors In Battle Over 'Open Access,'" *Wall Street Journal, Interactive Edition*, October 15, 1999. "If AT&T were to be hamstrung by the government, the real losers would be none other than the very consumers whose supposed advocates keep calling for such measures." Id.

[55] The FCC has said that it will do "whatever is necessary" to encourage increased deployment of broadband facilities and already has underway a number of initiatives that will further reduce barriers to investment in and deployment of broadband. Section 706 Report, at ¶ 105. The FCC has, for example, already issued an order to foster the commercial availability of set-top converters and other customer equipment. See In Re Commercial Availability of Navigation Devices, *Report & Order*, 13 FCC Rcd 14775 (1998). Likewise, it is completing a proceeding on the deployment of wireline broadband services. See In re Deployment of Wireline Services Offering Advanced Telecommunications Capability, *Memorandum Opinion & Order and NPRM*, 13 Com. Reg. 1 (1998). In addition, the FCC is taking steps to promote competition from wireless and satellite providers by, among other things, allocating, auctioning, and licensing more spectrum to these providers. See Section 706 Report ¶¶ 107-108. The FCC has also stated that it will continue to monitor broadband deployment and, should it find deployment is not reasonable and timely, it will take steps to promote investment and remove barriers to competition. Id. at ¶ 106. Recently, the FCC adopted several measures to enable providers of high-speed Internet access to deploy new technologies on a faster, more cost-effective basis to consumers. See *FCC Adopts Rules to Promote the Deployment of Advanced Telecommunications Services*, CC Docket No. 98-147 (Mar. 18, 1999).

[56] Joseph Farrell, *The Economics Against Forced Unbundling of Broadband Cable Internet Access* ("Farrell Economic Analysis") (Appendix B).

the data transport market — consumers have several alternatives to cable-based data transport [57] — making it easy for a potential entrant to partner with a credible ISP.

Finally, because the demand for broadband services is predicted to grow, we can expect further sustained investment in broadband facilities. As the FCC recently concluded:

> [R]esidential penetration of broadband at the end of the second calendar year of deployment is far more than the number of customers for the telephone, color television, and cellular service at the same stage in their deployment, and approximately the same penetration percentage as that of black-and-white television.[58]

Where demand is so dynamic, investment is certain to follow, particularly where, as here, there is ready access to capital for those seeking to build and deploy broadband facilities.[59]

The upside for high-speed services appears almost limitless. That reality is certain to drive significant further investment in broadband facilities, and the competition that will flow from that investment further demonstrates that the appropriate policy is one of vigilant restraint. As described more fully below, a policy adopting cable unbundling is unnecessary and would be counterproductive.

### C. Unbundling is Unnecessary and Would Significantly Harm Consumers

The proposal that the government impose on cable operators a common carrier, utility-type regulatory scheme that forces the unbundling of the cable modem services

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[57] "Given the high levels of investment in non-cable, two-way broadband technologies such as DSL, satellite, MMDS, and electric utilities, there was wide agreement that robust competition in the broadband industry in the long run is likely." *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct. 1999), at 33.

[58] Section 706 Report at ¶ 92.

[59] Capital markets are clearly sold on the future of broadband, as the billions of dollars in investment demonstrates. See id. at ¶ 36 ("American business and the capital markets are obviously betting that broadband will be successful in the business and consumer markets and many companies are rushing to seize part of that success.").

would eliminate or reduce the current strong incentives for investment, stifle technological development and service innovation, reduce competition, increase consumer prices, entangle local regulators in a morass of costly and burdensome price regulation, and ultimately eliminate or reduce the pro-consumer benefits of cable modem services and cable telephony offerings.

### 1. An Unbundling Requirement Will Decrease the Current Strong Incentive to Invest in Broadband Facilities

Plainly, the market for high-speed services is thriving. Cable has invested substantially — and plans to continue investing — in plant upgrades in order to provide its customers with broadband services.

For new entrants, such as cable operators providing telephony or Internet access services, regulation will impose costs and create serious disincentives to invest. This is particularly true because with telephony and Internet services, there are high up-front costs. Regulatory restraint, on the other hand, will "[foster] an environment that encourages investment not only in cable, but also in the alternative broadband technologies, such as wireless, satellite, and DSL."[60] The danger of negative effects is more pronounced where the regulations imposed are especially intrusive, such as common-carrier-type unbundling requirements, that are normally reserved for entrenched monopolists providing essential services.

In order to make its offerings available to cable operators, @Home and other cable Internet service providers invested both in broadband technologies and in content that takes advantage of those technologies.[61] These investments reflect @Home's

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[60] *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct. 1999), at 47.

[61] For example, @Home designed, developed and manages a new high-speed Internet network that enables subscribers to access services at peak speeds over 100 times faster than typical dial-up services. See Reply Comments of @Home Corporation on Section 706 NOI, CC Docket No. 98-146, at 3 (Oct. 9, 1998). @Home has invested in the development of services that are designed to take advantage of this new network. These services include software purchases with real-time downloading, digital audio services that permit the subscriber to listen to the audio while browsing the Internet, and high-speed multiplayer gaming. Id. at 6.

belief that services optimized for cable's high-speed broadband facilities will be attractive to consumers and therefore profitable for @Home. In contemplating whether to make these investments, @Home had to take into account the period of time available to recover the costs of the investments, including the costs of bearing the associated risk,[62] which depends, at least in part, or whether @Home's contracts with cable operators provide sufficient time to recover these costs. One way to provide that assurance is for cable operators to agree not to carry competing services, i.e., to provide exclusivity to @Home. Forced access would compel AT&T and other cable operators to breach their exclusivity agreements with @Home or simply refrain from offering the service at all, thereby reducing incentives to develop innovative services and architectures in the future.

Moreover, requiring forced access to the cable distribution system will invariably be accompanied by calls for the regulation of the price of that access. This will only exacerbate the adverse effects of regulation on broadband investment, and could, unless done correctly, give rival content providers access to the cable systems at a fee that is less than the true cost of providing the service — a further disincentive to innovation and investment.

Although it is far from clear which, if any, governmental entities would have authority to regulate the price of unbundled access, two things are clear. First, all those involved in this pricing debate are in for a long and cumbersome process.[63] Second,

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[62] The investments undertaken by @Home to provide the required network functionality and services optimized for the cable network are specialized in that they "cannot be redeployed without sacrifice of productive value." O.E. Williamson, The Economic Institutions of Capitalism 54 (New York, The Free Press 1985).

[63] Unbundling would necessarily involve complex, common-carrier and cost-of-service rate regulation of cable operator's broadband Internet service offerings. See Bruce Owen and Gregory L. Rosston, *Cable Modems, Access and Investment Incentives*, Dec. 1998, at 20-22. Cost-of-service proceedings at the FCC and state PUCs to determine pricing for cable and telephony services have often gone on for years before final resolution.

this process, and the uncertainty that it necessarily creates, will delay the introduction of new services to consumers and that, in turn, will limit consumer choices.[64]

The City should be concerned about the negative impact of a forced access requirement on broadband investment — the impact is real and immediate. Investment community leaders have issued strong warnings of the significant dangers of imposing unbundling regulations in the nascent broadband services business.[65] According to these investors, "even a hint of [regulation] would severely diminish the willingness of investors to finance system upgrades and new facilities."[66] Former FCC Commissioner Rachelle Chong agrees, concluding that a cable unbundling requirement would discourage facilities-based investment in the developing broadband market to the ultimate detriment of consumers.[67] Professor Farrell echoes this point, concluding that unbundling will decrease profitability (by requiring the firm to do what it otherwise would not do) and that, in turn, will reduce private incentives to upgrade networks and build out new services. Professor Farrell notes that economists generally agree that such consequences are especially pronounced in the case of innovative assets. This harmful

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[64] In a climate of such regulatory uncertainty, investment in broadband facilities would inevitably slow, fewer customers would enjoy the benefits of broadband services, and facilities-based competition to the incumbent LECs for voice and data services would be jeopardized. Id. at App. B, ¶¶ 47-52.

[65] See Joint Letter from Laura Martin (Credit Suisse), Dennis Leibowitz (DLJ Securities), Jessica Reif Cohen (Fenner and Smith), and Thomas Eagan (Paine Webber) to FCC Chairman William Kennard (Dec. 18, 1998) ("Martin Joint Letter") (Appendix C). See also Letter from Intel, Compaq Computer, Cisco Systems, IBM, Novell, and other Silicon Valley executives to Chairman Kennard, 12/19/98 ("Investments in [new broadband facilities] are very risky and lack any guaranteed return. Government regulation would actually limit the return on investment, and cause investors to be less willing to risk the billions of dollars necessary to build out the networks. Government intervention is particularly misplaced in the case of new broadband networks deployed by entities that lack the market position of traditional telephone companies.") (Appendix C.)

[66] Martin Joint Letter at 2 (emphasis added). "Not only would [regulatory] uncertainty diminish the ability of corporate entities to plan new buildouts, but it would effectively kill the public equity market for financing." Id. "If the Commission were to [adopt] ... common carrier regulation of cable companies providing Internet services, it could cast a significant cloud over the willingness of lenders and investors to provide additional capital to these companies." Phyllis Reggins, NationsBanc, Letter to FCC Chairman William Kennard, Oct. 7, 1998.

[67] Statement of Rachelle Chong (Appendix B).

effect would be compounded if regulated unbundling also involved price regulation of some kind.[68]

It is not only the Internet access marketplace that is at risk — the provision of local telephony over cable systems also requires substantial investments to upgrade cable plant. Because a cable unbundling requirement would deter investment in plant upgrades, it would seriously impair the ability of cable operators to offer local telephony over their systems in competition with the ILECs.[69] Where cable operators have competed for local telephone service, the result has been lower phone rates, and greater options for consumers.[70] Delaying the deployment of cable in San Francisco will allow competitors to set higher prices, and target areas other than San Francisco for the development of new and improved service options.

Moreover, a decision by San Francisco to impose unbundling on cable operators would set San Francisco apart from the rest of the country, forcing operators to purchase unique, non-standard, and inevitably more costly equipment to unbundle (even assuming such equipment would be effective as a technical matter), eliminating cost-savers like volume discounts on off-the-shelf equipment. The result would be higher prices for consumers and further disincentives for cable operators to roll out competitive Internet, telephony, and related services in San Francisco.

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[68] See Farrell Economic Analysis. As Supreme Court Justice Stephen Breyer warns: "Insofar as a historically based system holds the price of items below the cost of the *new* investment needed to produce them, it will obviously discourage new investment and bring about a shortage. Yet even if the system gradually adjusts and becomes a cost-based system, investment in new products still may suffer. Without regulation, shortages would be accompanied by high prices and high profits, which would attract needed investment. Moreover, firms would seek new products or anticipate shortages with the hope that by discovering new demand (or by anticipating a shortage) they will earn unusually high profits. Under a price controlled regime, they will at best be able to earn no more than a "normal" return, which is unlikely to include any special premium for added risk. Thus, the response to changes in consumer taste or need is likely to be sluggish." Stephen Breyer, Regulation and Its Reform, (Harvard University Press 1982), at 69.

[69] See also Section III., below, for a discussion on how, as a technical matter, a forced access requirement could limit cable operators' upstream bandwidth to such an extent as to preclude a cable operator's ability to offer competitive local telephony service over its cable system.

[70] See Comparison Chart, AT&T Local Telephony over Cable. (Exhibit E.)

For all of these reasons, the impact of an unbundling requirement in San Francisco would be severe: reduced investment, loss or delay of service innovations, reduced (and likely higher-priced) access to the Internet, and loss of the consumer benefits of telephony competition.

### 2. Unbundling Will Lead To Higher Prices For Consumers

Forced access to cable broadband would require cable operators to provide "transport only" service to unaffiliated ISPs. Currently, transport costs are supported by content revenue, making it possible for operators to provide access and content at a lower overall price. Separating transport from content will adversely impact consumers who will face higher rates for transport in addition to content-related fees.

Moreover, competition in a market free from regulation has already created an environment where "alternative technologies are attracting new subscribers at an exponential rate, and... prices for these new services are falling."[71] It is competition that leads to low prices: "As cable and DSL are deployed in the same markets, we have observed aggressive price competition. In various markets, DSL prices have been lowered to be competitive with cable modem service."[72] Thus, the City should not delay the advent of competing services from AT&T. The market has already proven that AT&T's investment in cable modem technology triggered competitive deployment of DSL and lower prices for consumers. The market should be allowed to work without unwarranted regulatory interference.

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[71] Broadband Access Report, City of Los Angeles Information Technology Agency (June 1999), at 42.

[72] *Broadband Today: A Staff report to William Kennard, Chairman of the Federal Communications Commission* (Oct. 1999), at 46.

## II. CABLE MODEM SUBSCRIBERS ENJOY OPEN ACCESS TO INTERNET CONTENT

AT&T firmly believes that its customers should have "easy access to the online content of their choice,"[73] consistent with the City's policy "supporting....non-discriminatory access to all content on the Internet."[74] In fact, many @Home subscribers use the service daily to reach the content and services provided on the World Wide Web by AOL, the Microsoft Network, Yahoo, Amazon.com, and more. AT&T recognizes that denying customers access to desired online services would only result in a loss of subscriptions: "Our message to the largest OSP and all the others couldn't be more direct: if you've got a service our customers want, we want you on our system."[75]

With AT&T's @Home service, the consumer has the power and flexibility to choose any online service provider, Web browser, or Web site. The @Home customer has full and open access to the entire Internet without being forced into @Home's content or anyone else's. For example, an @Home customer can install on his or her desktop an icon that accesses the Internet directly via Yahoo, Netscape, Bloomberg, or any other Web site or portal, without ever seeing an @Home screen.

@Home also enables its customers to access proprietary content located on private online networks. A good example is AOL's "bring-your-own-access" ("BYOA") plan. The BYOA plan enables any customer, including @Home customers, to choose any ISP and pay AOL just $9.95 per month, compared to the standard monthly AOL

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[73] *Telecom and Cable TV: Shared Prospects for the Communications Future*, Remarks of C. Michael Armstrong, Chairman and CEO of AT&T Corp., Before the Washington Metropolitan Cable Club (Nov. 2, 1998). See also Remarks of Leo Hindery, President and Chief Operating Officer, TCI, Inc., Before the FCC En Banc Hearing on Telecommunications Mergers (Oct. 22, 1998).

[74] Resolution No. 718-99, Board of Supervisors file 990455 (July 26, 1999).

[75] See *Telecom and Cable TV: Shared Prospects for the Communications Future,* Remarks of C. Michael Armstrong, Chairman and CEO of AT&T Corp., Before the Washington Metropolitan Cable Club (Nov. 2, 1998).

charge of $21.95.[76] In this way, a customer could choose @Home as the ISP, and access AOL, without being required to view any @Home content in order to get to the AOL content. The user would simply click on the AOL icon on his or her desktop and be presented with the AOL sign-on screen — one quick step to the AOL private network.[77] The choice of whether or not to use @Home's information service or to ever see @Home's content is completely up to the user. There is no need to ever click the @Home icon on the desktop, and, in fact, customers can remove the @Home icon from their desktop entirely.[78]

AT&T's @Home subscribers do not purchase separate "transport" and "content" services. In fact, there is no separate charge for @Home content, just as there is no separate charge for virtually all Internet-based content. For example, there is no charge for content on services such as www.yahoo.com, www.netscape.com, www.bloomberg.com, www.microsoft.com, www.msnbc.com, www.cnn.com, or www.washingtonpost.com. The one principal exception to this "no separate charge for content" rule is AOL. If a consumer does not want to use AOL's Internet access, AOL imposes extra charges on the consumer. AOL does not sell dial-up access without its front-end advertising screens and other content, nor does AOL sell access without content.[79]

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[76] BYOA allows customers "unlimited access to thousands of unique AOL features." See *Top 20 AOL Member Questions* (accessed Mar. 1, 1999) <<http://aol.com/nethelp/top20memberquestions.html>>.

[77] @Home's customers who subscribe to AOL's BYOA plan enjoy access to AOL's proprietary content at speeds up to a 100 times faster than a standard telephone line

[78] By contrast, the process is not so straightforward for users of the AOL private proprietary network who wish to access third-party content on the World Wide Web. AOL subscribers must dial up the AOL private network, wait, sign on, face a barrage of advertisements, menus, and whatever else AOL wishes the user to see in the way of AOL-specific content. Even if all the user wishes to do is reach the Internet through AOL, he or she must still go through, and pay for, the AOL proprietary content and screens.

[79] See also AT&T/TCI Merger Order, at ¶ 65 ("AOL also provides its content independently from its Internet access service, but not *vice versa* (if a customer would like to purchase Internet access from AOL, he or she must also purchase the content.") (citation omitted).

Any attempt by regulators to separate content from transport could lead to higher prices for @Home. The inclusion of content within @Home's integrated service allows @Home to sell advertising, and the revenues generated from this advertising offset its network and transmission costs. Without these revenues, @Home would have to recover its costs from other sources. Thus, rather than increasing consumer prices for cable Internet services, the inclusion of content in @Home actually reduces them.[80]

AT&T's cable modem subscribers want easy access to all kinds of online content. If AT&T or Internet service providers attempt to limit access to content, customers will seek out other providers who can provide access to the content they want. AT&T's Chairman has explained:

> The way that you make money in networking is to have the most traffic over your facilities. The way that you have the most traffic over your facilities is to attract the most content. And so, the idea that the cable industry is going to maintain some closed, proprietary system, like some content providers do, is probably not in our self-interest.[81]

AT&T and @Home will continue to give customers open access to Internet and other online content. If anything, regulation would lead to decreased access and higher prices to consumers.

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[80] See Affidavit of Timothy Kirk Mulron, In re Joint Application of AT&T Corp. and Tele-Communications, Inc. for Transfer of Control to AT&T of Licenses and Authorizations held by TCI and its Affiliates or Subsidiaries, AT&T's and TCI's Joint Reply to Comments and Joint Opposition to Petitions to Deny or to Impose Conditions, CS Docket No. 98-178, at Exhibit C (filed Nov. 13, 1998) ("The content that @Home provides thus is expected to pay for a significant share of @Home's costs and investments.") ("AT&T/TCI Joint Merger Comments") (Appendix B). See also Affidavit of Professors Janusz A. Ordover and Robert Willig, AT&T/TCI Joint Merger Comments, Exhibit B at ¶ 43 ("Because @Home collects advertising revenues that are associated with the content it provides, the fact that it provides content enables @Home to defray part of its network costs and investments. If @Home did not provide content, it would have to recover the diminished advertising revenue elsewhere, or else reduce the scope of its network.") (Appendix B).

[81] Ted Hearn, *AT&T's Top Man in Washington*, Multichannel News, Feb. 22, 1999, at 38.

## III. FOR TECHNICAL REASONS, MANDATING ACCESS BY NON-AFFILIATE ISPS TO THE CABLE MODEM PLATFORM WOULD DECREASE, RATHER THAN EXPAND, CONSUMER ACCESS TO HIGH-SPEED INTERNET SERVICE

For purely technical reasons, a hands-off approach will best serve the primary goal of encouraging the rapid deployment of high-speed Internet services to the greatest number of consumers in San Francisco. Indeed, a requirement that the cable platform be shared with non-affiliate ISPs would make broadband transmission available to fewer subscribers at slower speeds.

Although there is no consensus on the definition of "open access,"[82] there are two generic technical alternatives that are sometimes discussed: shared bandwidth and dedicated bandwidth. The discussion that follows explores the reasons why neither is practical or desirable in attempting to achieve the City's goal of high speed consumer access to Internet content.

### 1. Cable is a Shared Medium

As noted by the FCC in its recent report, a cable network, unlike a telephone network, "is a shared medium, wherein customers in a particular area share capacity."

> As a result, data transmissions are potentially more vulnerable to interference and degradation caused by the actions of individual subscriber's equipment. Further, transmissions speeds degrade as more subscribers are online.[83]

Cable distribution systems that provide broadband access face network management issues that telephone-based Internet access providers do not. In a telephone line-based network, users' lines are dedicated, as opposed to shared with other users, and

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[82] "[D]espite a flurry of national and grass roots activity concerning 'open access,' our panelists were not able to agree on a single definition of the term, much less recommend an appropriate regulatory classification and enforcement mechanism." *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct. 1999), at 38.

[83] *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct. 1999), at 19.

therefore, one user's connection cannot have an adverse impact on another user's connection.

In a cable distribution system, in contrast, if one user takes up an excessive amount of bandwidth, other users sharing the bandwidth in that area will experience network capacity problems, including lowered speeds. Likewise, a single misconfigured or misbehaving cable modem can adversely affect all customers on that segment of the plant. If, for example, a customer is running an old version of the cable modem software that causes problems for other users on that cable node, the network operator needs to forcibly upload new software to the customer modem. This is a network operator function, not a customer function, and one that would quickly become impracticable if cable operators were forced to allow multiple ISPs to share bandwidth over the cable infrastructure.

To address these and other technological issues, Excite@Home and other cable modem services have made enormous investments in systems designed to provide an integrated end-to-end solution, have adopted processes for coordinating with cable system operators, and have adopted contractual and technical limitations on customers' ability to degrade the service.

Imposing a legal requirement that cable television operators share bandwidth with non-affiliate ISPs would have two immediate negative effects: by increasing the number of users from rival ISPs — users not subject to @Home's integrated network management or contractual and technical restrictions — the high-speeds now available to customers under the current system would predictably decline, frustrating the very benefit that the @Home service provides. In this fashion, the non-affiliates would interfere (by design or otherwise) with each other's ability to service their customers in a reliable and fair manner, to the ultimate detriment of cable subscribers.

Another important effect of requiring shared broadband access by non-affiliates is increased costs, which will make high-speed Internet service less available to the average consumer. Capacity on any particular extant cable modem platform, as previously noted, is limited. As capacity declines and speed in a given location runs out due to the addition of ISPs, cable operators must run more fiber facilities and establish

more nodes within a neighborhood, thereby increasing the costs of deployment per subscriber. Those increased costs mean higher subscription rates for consumers, making high-speed access through cable less competitive with other broadband services (and, as a result, less likely to be widely deployed), and less affordable for average and low-income families.

The desire to avoid the expense of establishing more nodes within ever-smaller geographical areas provides a powerful incentive for cable operators and their affiliates to invest in bandwidth-conserving technologies, an incentive that non-affiliate competitors in a shared bandwidth system would not have, because the benefits of such investments would accrue to other ISPs on the system. Imposing a requirement that cable operators share the bandwidth with non-affiliates provides the non-affiliate entrants with an incentive to use more bandwidth and a disincentive to invest in new technologies and systems designed to mitigate capacity problems, all to the ultimate detriment of consumers.

The affordability of cable-based broadband services would also be dramatically affected by the need to develop the technical systems that would permit multiple ISPs to operate on the cable distribution system. Equipment does not currently exist to manage multiple ISPs under a shared bandwidth model. It is only practical to have one Dynamic Host Configuration Protocol ("DHCP") server and one provisioning system for a given Cable Modem Termination System ("CMTS").[84] These systems need to interface with the ISP's customer database and also with the cable operator's homes passed and node-combining information in order to activate a customer's cable modem and computer. It is critical that the City understand that these systems do not currently exist for a world in which multiple ISPs operate on the same shared network.

Such systems can, in theory, be developed, but at a substantial cost because of the requirement that they interface with multiple databases. Those development costs would significantly increase the cost of providing service to customers, with the

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[84] See Affidavit of Milo Medin, Joint Application of AT&T Corp. and Tele-Communications, Inc., FCC CS Docket No. 98-178 (Nov. 12, 1998).

unavoidable result that cable-based broadband would be less competitive with other high-speed or dial-up services and far less affordable to the average consumer. In other words, the cost of solving the many technical problems that cable broadband servers must surmount in a shared bandwidth environment will both slow the deployment of high-speed Internet services, making such services, as well as local telephony, available to fewer customers, and will make those services more expensive than their competitors. That result is, of course, the very opposite of the goal that the City's policy is intended to achieve.

### 2. A Dedicated Bandwidth Approach Would Not Solve These Problems

One technical problem existing cable systems face in attempting to offer interactive services such as Internet access and telephone service over the cable modem platform is the limited amount of return path, or upstream, bandwidth available for such services.[85] In contrast to downstream bandwidth, cable bandwidth for upstream traffic is limited to about 20 MHz.

Dividing, through a dedicated bandwidth system, upstream bandwidth capacity among multiple ISPs would dramatically decrease both the total bandwidth capacity available for upstream transmission and would leave insufficient capacity for individual ISPs, thereby decreasing the capacity available to all members of the public and degrading the ability of all ISPs using the system to provide viable Internet service to their customers.[86]

Worse yet, each additional ISP decreases the overall capacity of the systems. In order to provide quality service and to minimize interference, spare capacity must always be set aside on the outer edges of each band of dedicated spectrum. When the upstream spectrum is divided up among several providers, each provider needs to set

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[85] See Barbara Esbin, *Internet Over Cable: Defining the Future in Terms of the Past,* FCC Office of Plans and Policy Working Paper Series, No. 30, at 76-77, Aug. 1998.

[86] Over 900 ISPs currently serve the "415" area code. See List of Area Codes Serviced by ISPs Within the United States. <<http://thelist.Internet.com/area code>>.

aside such spare capacity. Because more spectrum is devoted to reliability protection in the multiple-provider scenario, there is less spectrum available for data and voice services.

Inevitably, under the divided, dedicated bandwidth approach suggested by the notion of "open access," fewer subscribers will have any access, and those who do will be paying much higher per-subscriber rates for slower and less reliable Internet service – the very opposite of what the City hopes to achieve.

Moreover, as with a shared bandwidth model, cable operators would need to develop routing and addressing equipment and systems needed to permit an ISP's server to interface with the cable system as well as the customer's cable modem and computer. Currently, such systems do not exist. The significant costs of developing such systems would mean higher subscriber rates, and the need to develop those systems would delay the rollout of cable modem services, frustrating the City's goal of broadening access to those services,[87] as well as delaying or eliminating competition for local telephone service in San Francisco.

In sum, the technical issues peculiar to the cable broadband architecture make any sort of "open access" requirements problematic. Technological processes and systems for sharing access to the cable modem platform, and capable of handling the capacity problems endemic to a shared medium, do not currently exist. Requiring cable modem providers to develop and implement such systems will impose, at a minimum,

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[87] Implementing a dedicated bandwidth approach to shared access of the cable platform would also prove enormously complicated and costly for regulators. First, regulators would have to identify the appropriate amount of cable bandwidth to assign to each ISP that seeks forced access to the cable system. Even if a determination could be made today about the appropriate level of bandwidth to be assigned to each ISP, however, given the highly dynamic nature of the Internet access business, such a determination would likely be obsolete as soon as it was codified in the regulations. If regulators were to require allocation of a certain amount of bandwidth to participating ISPs, but later determined that amount was infeasible, inefficient or otherwise unworkable, what would be the process for reallocating the bandwidth and how would that process affect the existing system? Second, regulators would have to devise a way to accommodate new ISPs that demand access to the cable system in the future. How, for example, would new ISPs be added to the system? Would the amount of upstream bandwidth dedicated to each existing ISP be reduced to accommodate the new ISPs seeking access? If so, the underlying business plans of these existing ISPs would likely be undermined. Or would the regulators decree that newcomer ISPs should be denied such access to the cable plant to avoid disturbing the existing ISPs?

significant costs on an industry that is only beginning to compete for customers, most of whom now use much less expensive and technologically simpler Internet services. If, through appropriate investment in new technologies and processes, the cable industry can solve some of the added capacity and network management problems it would face in a shared access regime, the inevitable result of an unbundling requirement will nevertheless be that the costs associated with the new mandates will drive up prices for consumers, making cable modem service affordable for fewer consumers, and that the deployment of such service will be delayed, giving consumers fewer choices among providers.

## IV. THE CITY IS LEGALLY PROHIBITED FROM IMPOSING "UNBUNDLING" OR OTHER FORCED ACCESS REQUIREMENTS ON CABLE OPERATORS PROVIDING INTERNET SERVICES

As discussed above, any open access policy that includes a requirement that the cable operator provide ISPs high-speed data transport services will in fact defeat the City's stated goal of increasing consumer access to broadband services. In addition, a forced access policy will be legally unenforceable. When Congress passed the Telecommunications Act of 1996 (the "1996 Act"), it expressly prohibited regulation of the Internet. Congress also made clear that cable Internet services cannot be regulated like "common carriers." The 1996 Act prohibits local franchising authorities from deviating from this policy.

The Federal Communications Act ("Communications Act") establishes different regulatory regimes for different technologies. Telephone companies are subject to regulation under Title II of the Communications Act, and are treated as common carriers. It is only by exception that they are permitted to create facilities or services which they may use on a selective or proprietary basis. Cable television, on the other hand, is governed by Title VI. Section 621(c) in Title VI of the Communications Act expressly prohibits the FCC, states, or local governments from imposing unbundling

requirements, or otherwise treating a cable operator as a common carrier or utility, by virtue of the operator's provision of a "cable service."[88]

Prior to 1996, the Communications Act defined the term "cable service" as a one-way transmission to subscribers of programming services, with no subscriber interaction other than that necessary to select programming. In the 1996 Act, however, Congress expanded the definition of "cable service" to include interactive services provided by cable operators.[89] The legislative history explains that the new definition was intended to reflect the changes in cable distribution technology, from a one-way means of transmitting video programming to a two-way means of offering a host of enhanced services.[90] Under the expanded definition, the delivery of content-enriched high-speed Internet access is considered a cable service if it is provided by a cable operator over a cable system.[91] The 1996 Act was specifically amended during the legislative process to make it clear that cable operators are not engaged in the provision of "telecommunications service" to the extent they provide cable services.[92]

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[88] See 47 U.S.C. § 541(c) ("Any cable system shall not be subject to regulation as a common carrier or utility by reason of providing any cable service.").

[89] See 47 U.S.C. § 522(6).

[90] The House Report, for example, states that "[t]he conferees intend the amendment to reflect the evolution of cable to include interactive services such as game channels and information services made available to subscribers by the cable operator, as well as enhanced services." See H.R. Conf. Rep. 104-458, 104th Cong. 169 (1996).

[91] An FCC staff working paper recently endorsed this conclusion, and other FCC decisions support it as well. See Barbara Esbin, Internet Over Cable: Defining The Future In Terms Of The Past, FCC Office of Plans and Policy Working Paper Series, No. 30, at 87, Aug. 1998 ("The Commission could reasonably conclude that Internet access services . . . when provided by a cable operator over its cable system, come within the revised definition of 'cable services' under Title VI."). For example, in its recent Pole Attachment Order, the FCC held that a cable operator that is using a pole attachment to provide Internet service must be charged the lower pole attachment rate that applies to cable service, rather than the higher rate that applies if the operator is distributing a telecommunications service. See In re Implementation of Section 703(e) of the Telecommunications Act of 1996: Amendment of the Commission's Rules and Policies Governing Pole Attachments, *Report and Order*, 13 FCC Rcd 6777, at ¶ 33 (1998).

[92] See Federal-State Joint Board on Universal Service, Report to Congress, 13 FCC Rcd 11501, 11523 ¶ 44 (1998) (explaining the reference to cable service was deleted from the Senate definition of "telecommunications services" so that courts would not interpret the term "too broadly and inappropriately classify cable systems ... as telecommunications carriers."). The change was "intended to clarify that

*(footnote continues on next page)*

Because the provision of cable modem service that provides Internet access clearly falls under the revised and expanded definition of a cable service, Section 621(c) precludes the imposition of an unbundling or forced access requirement on a cable operator providing those services. Moreover, Section 624(f)(1) of the Communications Act states that "[a]ny Federal agency, State, or franchising authority may not impose requirements regarding the provision or content of cable services, except as expressly provided in [Title VI of the Communications Act]."[93] An unbundling or mandatory access requirement is not "expressly provided" in Title VI, and, in fact, is expressly precluded by Section 621(c); therefore, this provision reaffirms the prohibition on an FCC or locally-imposed unbundling requirement.[94] The same is true with respect to an FCC or locally-imposed resale requirement. The FCC recently reaffirmed this principle in its Order approving the AT&T/TCI merger:

> We continue to recognize and adhere to the distinctions Congress drew between cable and common carrier regulation. Under present law, neither cable operators nor common carriers providing cable service, other than on a common carrier basis, are subject to common carrier regulations under Title II of the Communications Act.[95]

The conclusion that unbundling requirements cannot be imposed on cable modem services also is strongly supported by the fact that, in the 1996 Act, Congress specifically limited unbundling obligations to the traditional telephone companies, while refraining from imposing comparable requirements on any other type of entity, including

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carriers of broadcast or cable services are not intended to be classed as common carriers under the Communications Act to the extent that they provide broadcast or cable services." 141 Cong. Rec. S7996 (June 8, 1995) (statement of Sen. Pressler).

[93] 47 U.S.C. § 544(f)(1).

[94] Some parties have advocated that cable operators be forced to carry third-party Internet data on the basis of cable operators' "leased access" obligations. See e.g., Comments of GTE at 46-48 in In re Application for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from TCI to AT&T, CS Docket No. 98-178, FCC 99-24, Oct. 29, 1998, at 46-48. Aside from the fact that leased access obligations apply only to "video programming" and not to "other programming services" such as high-speed Internet data, the statute explicitly places all responsibility for resolving leased access issues with the FCC (and in the courts), not with the local franchising authority.

[95] AT&T/TCI Merger Order at ¶ 29 (citations omitted).

cable operators.[96] In fact, Congress expressly rejected proposals to adopt a unified regulatory framework for advanced services that would subject cable services to common carrier-like obligations, including an "unbundled access" requirement.[97]

Moreover, Section 651(b) of the 1996 Act, which authorizes LECs to offer video programming services over their facilities as either an open video system operator or as a cable operator, contains the following provision:

> (b) LIMITATIONS ON INTERCONNECTION OBLIGATIONS. A local exchange carrier that provides cable service through an open video system or a cable system shall not be required, pursuant to Title II of this Act, to make capacity available on a nondiscriminatory basis to any other person for the provision of cable service directly to subscribers.[98]

This provision confirms the analysis set forth above, namely that with respect to the provision of cable services (even by entities that otherwise qualify as LECs), Congress clearly intended that the unbundling, resale, and other common carrier requirements of Title II of the Act may not be applied.

In addition, local franchising authorities may regulate cable operators only to the extent permitted under Title VI. Section 636 of the Communications Act expressly preempts "any provision of law of any State, political subdivision, or agency thereof, or franchising authority, or any provision of any franchise granted by such authority, which is inconsistent with this Act."[99] Title VI contains no grant of authority to local franchising

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[96] Congress imposed unbundling obligations on incumbent LECs in order to break their monopolies over the provision of local telephone services. See 47 U.S.C. § 251(c)(3). The 1996 Act fundamentally restructured local telephone markets, ending the monopolies that states historically granted to local exchange carriers (LECs) and subjecting incumbent LECs to a host of duties intended to facilitate market entry, including the unbundling obligation under 47 U.S.C. § 251(c). See, e.g., AT&T Corp. v. Iowa Utilities Board, 119 S.Ct. 721 (1999).

[97] See, e.g., *Stevens Draft Includes 'Title VII' Provision: Senator Hopes to Include Language in Other Bills*, Telecommunications Reports, Apr. 18, 1994, at 1-2; *White House Working to Include 'Title VII' in Telecom Bills; Hollings Says Provision 'isn't realistic at this time'*, Telecommunications Reports, Feb. 28, 1994, at 4-6.

[98] 47 U.S.C. § 571(b) (emphasis added).

[99] 47 U.S.C. § 556(c).

authorities that would provide a basis on which to impose access requirements on cable on-line services.

Finally, it should be noted that imposing a mandatory access or unbundling obligation on cable Internet services would cause a loss in local government revenue because, as noted above, those requirements cannot be imposed on cable services. To the extent that the City attempts to avoid that restriction by characterizing the provision of cable Internet service as something other than cable services, it would eliminate its ability to collect franchise fees for those services.

## V. PROPOSED OPEN ACCESS REGULATORY STATEMENT

Accordingly, AT&T believes that San Francisco should follow the FCC's policy of "vigilant restraint." If San Francisco nonetheless feels compelled to adopt a regulatory statement at this time, AT&T respectfully submits that the following Regulatory Statement would be appropriate:

> No provider of Internet access services shall discriminate among residential consumers in the availability of such services or in the rates, terms and conditions thereof within the service area in which such Internet access services are offered. All providers of Internet access services shall permit residential consumers to access all content on the Internet and shall provide consumers with the ability to exit the service provider's home page or to access other portal services via a desktop icon on a single "click through" basis. Nothing contained herein shall prohibit or restrict the right of a provider of Internet access services to provide services on a discount rate, bulk rate or promotional rate basis.
>
> In addition, every provider of Internet access services in San Francisco shall, for all of its communication-related features (e.g. instant-messaging), publish and adhere to application program interfaces ("APIs") sufficient to permit unrestricted interoperation of any other ISP's communication-related features with those offered by that provider at no charge.

This regulatory statement meets the fundamental policy goals of the San Francisco Board of Supervisors, because it promotes access to all content on the Internet. In contrast, the "open access" regulation proposed by competitors and apparently contemplated by the DTIS in its RFI (i.e., granting unaffiliated ISPs mandatory access to AT&T's cable modem platform) is not readily achievable technically, is inefficient operationally, is unwarranted and inappropriate because it will delay the roll out of new services, thereby denying consumer choice of high-speed Internet access services, will threaten the universal availability of such services, and will draw the City of San Francisco into judicial proceedings because an unbundling requirement is unlawful.

## PART TWO: AT&T'S RESPONSE TO SPECIFIC ISSUES RAISED IN THE RFI

Although the foregoing discussion touched upon many of the specific issues raised in the RFI, for the sake of clarity and convenience, AT&T responds further in the following Part to specific questions raised in the RFI.

### A. Pricing

**Is it sufficient for the City's open access requirement to state that broadband providers must offer high-speed Internet transport services to unaffiliated ISPs on the same rates as it offers them to itself and its affiliated ISPs? What, if any, role should the City play in enforcing non-discriminatory pricing and resolving pricing disputes between broadband platform owners and unaffiliated ISPs? Should the City follow the Canadian approach in setting prices?**

As Part One of these comments demonstrates, there is no legal or policy basis for requiring cable operators to offer Internet "transport services" to unaffiliated ISPs. Furthermore, a requirement that such services be offered on nondiscriminatory terms would be highly intrusive and ultimately unworkable. At present, cable operators pay Excite@Home and other cable modem services providers for the right to offer their product. How, under a nondiscriminatory transport services access requirement, would these operators be required to offer such services to unaffiliated ISPs? Would the cable

operator be expected to negotiate a new agreement with the cable modem service provider and with the unaffiliated ISPs, under the supervision of the City?

The kind of government micromanagement necessary to implement and enforce pricing regulation in connection with forced access would be extremely difficult and very costly. It would certainly mire industry and City regulators in complex and thorny disputes. San Francisco would be forced to acquire or develop the personnel, accounting systems, reporting processes and other substantial resources that would be needed to implement and enforce such a price regulatory regime. Government regulators and services providers would be endlessly consumed with accounting regulations, cost allocations, other pricing rules, and administrative proceedings.

A cable resale requirement similarly would present numerous technical and practical difficulties. For example, a resale obligation implies that @Home's content would have to be blocked for AOL subscribers who use @Home solely for internet access.[100] These changes would include numerous back-office modifications to ordering, provisioning, repair, maintenance, and billing systems. Both cable operators *and ISPs* would be forced to build ordering, provisioning, repair, maintenance, and billing systems necessary to support a wholesale/resale structure — current systems cannot support a company-to-company order handling process. And the technical challenges associated with unbundling would apply equally to the attempted implementation of a cable resale requirement.

As recently noted by the FCC, "Even if a regulatory scheme could be devised at this early stage, such a scheme would likely be very complex and burdensome."[101] For example, in 1996, the Canadian Radio-Television and Telecommunications Commission adopted a rule requiring incumbent cable operators to provide non-

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[100] If this were required, fundamental changes to the entire service would be necessitated, including: (1) the user's cable modem would have to be modified to ensure that the user connects directly to the reseller's service; (2) the compensation arrangements between AT&T and @Home would have to be altered; and (3) service representatives must be substituted for AT&T service representatives for customers that purchase the resold services.

discriminatory access to unaffiliated ISPs. But resale has not begun: it has taken three years to establish conditions for interconnection and resale by independent ISPs, and trials to determine rate schedules have not even started.[102] The Canadian experience lent further support to the FCC's adoption of a policy of "vigilant restraint": "This type of regulatory delay, and its resulting uncertainty, threatens to slow down the nascent broadband industry and would be inimical to the intent of the 1996 Act."[103]

Resale in the local telephony arena has proven to be a costly and dismal experience. ILEC ordering, provisioning, and interface systems, known collectively as operation support systems ("OSS"), proved to be wholly inadequate in handling the volumes of orders CLECs generated. CLECs found that, although they might be successful in signing up customers, inadequate OSS capacity meant long waits before customers actually received service. Further, CLECs have lost billions of dollars in their failed attempt to enter the local market using resale. Compulsory local service resale has proven to be a failure. If resale failed in the local telephony context, despite such enormous investment, resale of cable Internet services would certainly fare no better.[104]

## B. Business Processes.

**There are a number of business processes that must be developed to make it possible for an ISP to use another operator's broadband platform, including: ordering, provisioning, billing, maintenance and customer service arrangements. Can the City rely on the industry to develop effective business arrangements without intervention? (In other words, to establish "operation support systems" that do not present undue obstacles**

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[101] *Broadband Today: A Staff Report to William Kennard, Chairman of the Federal Communications Commission* (Oct. 1999), at 44.

[102] Id. at 45.

[103] Id.

[104] Cable regulators would be required to expend significant time and resources implementing a resale requirement, just like state regulatory commissions that labored through protracted proceedings to establish a proper wholesale discount. Cable regulators are likely to have a more difficult time addressing the wholesale discount issue than their telecommunications counterparts. Whereas state regulatory commissions have a long history of analyzing industry cost studies, cable regulators have never done so and thus would likely be required to spend a significant amount of time and resources "getting up to speed."

**to unaffiliated ISPs?) Should the City facilitate the creation of standards regarding business processes or have a role in resolving disputes concerning these processes?**

For an ISP to use a cable operator's broadband platform requires a complex agreement. The agreement must take into account the unique aspects of the ISP, including its customers, products, services, type of usage, amount of usage, technological capabilities, and other individualized issues that can only be addressed on a case-by-case basis. Because each agreement is unique, and will require an individual assessment, government intervention in this area would be impracticable, costly and certain to fail. Each arrangement must be evaluated independently, and should not be regulated by any sort of blunt, generalized regulation. In addition, if regulation were appropriate, which it is not, it could only be implemented at the national level. Thirty thousand jurisdictions establishing thirty thousand standards would be impractical in the extreme.

## C. Network Management.

### 1. What are the principal network management functions that must be performed in order to provide open access over a broadband platform with shared bandwidth?

There are numerous network management functions that must be put in place to successfully run a cable modem based broadband platform. The assumption is that this question refers to what might be unique requirements for a shared access platform. It will be important to consider that since the cable modem system is a shared "bus" distribution system, one subscriber's actions and network use or one ISP's actions and network use can have broad impacts on all cable modem customers. Accordingly, in the forced access environment, the cable operator would be required to create and implement monitoring tools to oversee the use of bandwidth by subscribers and by each ISP and to search for signs of system abuse. Further, since some third-party access solutions involve multiple IP pools, management tools would be necessary to administer address blocks, and to refresh address blocks when pools run low. Since subscriber

counts will be in the hundreds of thousands, this process would need to be highly automated.

### 2. To what extent, if at all, are capacity management issues increased with multiple ISPs using the same shared bandwidth?

As mentioned above, abuse would need to be monitored as well as system wide usage patterns. In a shared environment, one ISP could easily use a disproportionate amount of system resources and adversely impact all other ISP and users of the system. Further, there would be an increased need to closely monitor networking equipment capacity, since the nature of shared access requires unique configurations that will place extra demands on network equipment, such as multiple address pools, tunneling overhead, and loss of use of local proxies.

### 3. Is there a limit on the number of unaffiliated ISPs that can be accommodated?

As discussed above, the addition of even a single ISP on a dedicated bandwidth basis or a shared bandwidth basis creates significant technical issues. Most importantly, it eliminates the very advantages that the broadband customer seeks: speed, video enhancements, music and all the features that go with increased capacity.

### 4. Will open access degrade performance or limit access to new services?

Open access would degrade network performance, mostly by adding latency and decreasing throughput.

### 5. How should the network be managed? Should the City play a role in addressing network management issues?

The processes of implementing, automating, and operating network management systems for broadband cable modem infrastructure are complex, which explains in part why these responsibilities are fulfilled on a uniform national basis by Excite@Home. These same complexities preclude system-by-system management by a myriad of

cable operators with varying degrees of technical sophistication, and certainly demonstrate that network management would not be an appropriate role for the City to take on.

### D. Broadband Marketplace.

#### 1. Identify providers, including wireless or satellite, that currently offer San Francisco residential consumers high-speed Internet access service. What other providers of broadband access to residential consumers are available now?

As discussed in Section I, above, high-speed Internet access providers currently serving San Francisco residential consumers include PacBell, Qwest, MCI WorldCom, GST Telecom, Verio, North Point, Covad, Concentric (through its affiliation with Wavepath), Teligent, and DirecPC. Further, over 900 ISPs provide Internet access services in the San Francisco area, including dozens of smaller ISPs that offer DSL service to residential customers.

#### 2. What other providers of broadband access to residential consumers will be available in one, three and five years?

RCN is in the process of laying its high-speed lines in the San Francisco area to compete directly with AT&T. Sprint is deploying ION high-speed Internet access and telephone service throughout the country. Earthlink announced that it will partner with PacBell to offer its Earthlink/Sprint DSL service in San Francisco next month. Qwest is introducing end to end access direct fibers in four California cities beginning early next year. Global Crossing is constructing a network to carry voice and data.

**3. Are there any technical constraints that will limit the availability of these services to any segment of the City? (For example, would hilly terrain or pervasive fog make multi-point distribution service (LMDS), a new type of high-speed wireless connection, impractical in certain San Francisco neighborhoods?)**

AT&T does not believe that substantial constraints exist in San Francisco, but DTIS should note that wireless services are dependent upon a line of sight from the multi-distribution points to the customer.

**4. As the number of providers of broadband access to residential consumers increases, should the City continue to maintain an open access requirement?**

The City should continue to support the two-pronged, consumer-focused policy adopted by the Board of Supervisors in the Board Resolution. It makes no sense to impose an "open access" requirement on the nascent cable broadband industry. The only possible rationale for an open access requirement is to ensure that one high-speed provider does not dominate the marketplace or slow deployment of high-speed Internet service to the public at large – a circumstance that does not exist in San Francisco today.

Cable does not dominate the Internet marketplace; it *is* the new entrant. It neither currently enjoys, nor is projected to enjoy, substantial (let alone monopoly) power over high-speed Internet access. There are three present alternatives to cable high-speed access, all of which have a "head start" on cable in San Francisco, and one of which — DSL — is the subject of billions of dollars of investment designed to make DSL even more competitive with cable and other high-speed providers. Imposing an "open access" requirement on cable alone would slow down the deployment of cable Internet service, causing it to lag behind its high-speed competitors, and lessening the incentive for those competitors to invest in research and development of technologies that will make high-speed service both technically feasible and affordable for the greatest number of users.

If one high-speed alternative comes to dominate the marketplace, and that alternative — whether it is cable, DSL, satellite, or wireless — fails to respond to market incentives to provide the most affordable access to its high-speed Internet service to all of its customer base, then, and only then, should regulatory bodies consider adopting measures to protect consumer choice. And, for all the reasons set forth in the FCC Report, that regulation should take place at a national level, because a patchwork of local regulations will stunt the growth of this burgeoning industry.

### 5. What impact will this increase in capacity/number of providers have on the market for broadband transport services?

An increase in the capacity and number of high-speed Internet access services providers — an increase that has been fueled by the mere announcement of the deployment of facilities by AT&T — will continue to have a positive impact on consumers. As service providers labor to differentiate their services, residential consumers will be rewarded with lowered prices, better service, and additional choices.

### 6. Will excess capacity force transport providers to open their platforms?

AT&T believes that competition between alternative technologies is likely to continue to be the key market force. Excess capacity will not affect the "open access" issue, but will, as in any market, tend to reduce prices.

### 7. Should the City develop a standard for effective competition when it should no longer require open access?

Effective competition currently exists and, indeed, was spurred by the potential deployment of high-speed broadband services by AT&T. The deployment of such services by AT&T in San Francisco has not yet begun. If the City is to act at all, the City could consider a standard like that which has been adopted at the federal level, i.e., deferring regulation unless it is clearly demonstrated that cable modem services or some other technology has dominated the Internet access market and has exercised monopoly-type power, which in this industry is, and will remain, highly unlikely.

**8. Should RCN be subject to the same open access requirement that is applied to the incumbent cable operator?**

A regulation providing for mandatory access to AT&T's cable facilities — or the facilities of any cable operator — is neither necessary nor sound public policy.

**9. Considering all potential revenue streams, including cable, telephone and wholesale Internet access service, to what extent will open access increase/decrease revenues and financial risk?**

As described above, a forced access regulation would have a dramatic effect on revenues and financial risks. A forced access requirement would increase rates for Internet access as the price of transport would no longer be subsidized by content revenues. Management costs, regulatory compliance costs, and increased billing and other administrative costs would grow exponentially.

**10. To what extent will an open access requirement increase/decrease use of an operator's broadband platform?**

A forced access requirement would inevitably decrease the efficiency of the operator's bandwidth platform in the short term. The measures necessary to avoid some of the technical issues presented by bandwidth-sharing through a "dedicated bandwidth" approach would *substantially* decrease the amount of bandwidth available to consumers.

As previously explained, technologies and traffic control systems necessary to implement shared bandwidth with non-affiliated businesses do not currently exist, and the substantial expense of developing them, and the ungainly process of determining who should pay for them, would slow the deployment of cable broadband in San Francisco. Regulation would impair access to the system because of the increased prices San Francisco consumers would have to pay for those system-specific development costs. Absent such a forced access requirement, the full cable bandwidth could be available immediately to cable subscribers as AT&T rolls out cable Internet service (and local telephone service) in San Francisco.

To avoid the capacity management issues presented by a shared bandwidth approach by adopting a "dedicated bandwidth" model would avoid a few of the technical "traffic control" problems that would arise under a shared bandwidth regime, but would have the effect of decreasing the bandwidth spectrum available for consumer use. Simply put, forced access, no matter how it is structured, will immediately reduce access to cable based high-speed Internet services in San Francisco.

## E. Technical Arrangements.

**1. To facilitate DTIS reporting on developments in the industry pursuant to the open access resolution, provide a description of any promising technical arrangements for providing open access. Please explain these proposed technical arrangements. Comment on any way that the City can structure its open access rule to accommodate the development of efficient technical solutions.**

AT&T is not presently aware of any promising technological arrangements (that are more than a mere theoretical possibility) to solve the substantial issues presented by granting unaffiliated ISPs forced access. Many proposed "solutions" are technically impractical because they would "break" other components of the broadband architecture, such as proxy servers. A potential solution can be realized, if at all, only after a substantial investment of time, money and thoughtful analysis. More modest technical arrangements, such as peering agreements or "carrier hotels," which do not involve the physical dismemberment of the cable plant, may be worth considering, assuming that those arrangements would be appropriate and consistent with market-based expectations and realities. Common transport with standard interconnects vastly simplifies the implementation of third party access. In that model, the third party participates in a standard peering relationship with the cable operator, typically via the BGP protocol. This is the industry standard method on the Internet for connecting two networks and exchanging traffic. Such a system would allow for customers to be addressed out of one common address pool, greatly simplifying provisioning.

Additionally, proxy servers could continue to be used, allowing for higher speed transfers and reduced latencies.

### 2. Provide a description of any planned or completed trials or actual implementation of proposed technical arrangements. Do the trials demonstrate that the proposed technical solution would function in a large cable system with multiple ISPs?

AT&T has not participated directly in any trials to date. It is aware that GTE conducted a "friendly" 3-ISP trial with its own ISP and with its partner — AOL — and AOL's partner, Compuserve. That friendly trial did not attempt to address, in any meaningful way, the problems that would be presented by full scale deployment, involving a large number of independent (and competing) third party ISPs accessing the cable modem infrastructure. It also failed to address, among other things, an equitable sharing solution in a shared medium environment, as opposed to the dedicated network used to provide telecommunications services. No solution was either proposed or tried to the problem of disproportionate bandwidth use by one ISP customer. The trial also failed to address other issues critical to assuring a high quality customer experience, including capacity planning, customer interference, network integration, customer support, network management, and advanced services.

Nor did the trial (in which GTE attempted a retrofit of a telco-based architecture) deal with or in any way acknowledge the unique issues presented by the cable modem, including the critical role that modem provisioning and authentication play in offering cable modem services. Cable modems simply will not operate without complex backend systems that provide provisioning and authentication services. Some of the key unresolved issues are how the cable operator and an independent ISP would work together to activate the cable modem, how the ISP would denote differentiated service levels to the cable operator, how the cable operator would know when to disconnect a modem, and how the cable operator that deactivates a modem (due, for example, to customer abuse) would communicate that to the ISP. *For businesses with millions of subscribers, none of these processes can be manual, so they must be highly automated.* No automation solutions were tried, or even proposed, in the GTE trial.

GTE likewise has not developed a mechanism which allows multiple ISPs to extend an IP multicast infrastructure to reach to the cable modem. Without such a mechanism, ISPs would be limited in their ability to offer scalable and efficient value-added services based on multicast, such as stock tickers, large scale computer gaming, and one-to-one video teleconferencing.

The GTE proposed shared access solution would also decrease total capacity for internet and e-mail available to end users on the cable network by increasing overhead. Finally, the GTE trial relied on cable modems that are not yet on the market.

### 3. Will any proposed technical arrangement decrease the functionality of the cable modem to end users in any way?

There are a number of potential impacts to cable modem functionality that would result from third party access arrangements. Certain tunneling solutions will cause multicast protocols to no longer function properly. Further, certain quality of service (QOS) features could be difficult to implement in a multi-ISP environment. Tariffing issues alone could make QOS implementation impossible. Additionally, modem-to-modem data connections would be much less efficient if two customers from different ISP's attempt to communicate directly, requiring the routing of data all the way back to data aggregation and arbitration points. The two dominant solutions cited (source based routing and tunneling) will not be able to take advantage of the extensive caching (proxy) server solution that is currently in place. This will result in less efficient use of network transport, increased transport costs, and higher latency for fetching web and ftp traffic (slower service).

## F. Interconnection.

**Does the way the City structures its open access requirement have any implications for interconnection arrangements? Should the City require interconnection at any point chosen by the unaffiliated ISP or require interconnection only at the same point that the broadband facility provider interconnects with affiliated ISPs? Are various methods of interconnection compatible? Will the method of interconnection have implications for the types of service that an ISP can offer its subscribers? Should the City play any role in monitoring the development of interconnection or collocation**

**solutions or resolving disputes concerning interconnection or collocation? Should the City play a role in resolving disputes concerning collocation of the equipment of unaffiliated ISPs on a cable operator's property?**

Interconnection directly at the cable distribution facility raises a host of technical issues and is impractical due to the physical constraints of hub facilities, system management issues, physical access and security concerns. To the extent that interconnection arrangements or discussions concerning potential arrangements (e.g., peering agreements or "carrier hotels") are being considered, the primary responsibility for such arrangements lies with the ISPs because, in that case, interconnection takes place well outside the cable facilities.

From AT&T's perspective, any interconnection arrangement must include a resolution of multiple issues, including ramifications on network architecture, provisioning, traffic flows, multi-user protocols, system compatibility, uniform functionality, and should include items such as minimum/maximum user guarantees, provisioning terms amongst users, and customer service/support.

### G. Application Of Content Safeguards In San Francisco.

#### 1. How well will measures such as a single click through requirement or a carrier hotel arrangement protect citizens' access to information over the Internet?

AT&T believes that open access to content is essential. AT&T and other cable operators have spent billions of dollars to facilitate open access through the design and construction of end-to-end IP based broadband data networks. Utilizing this advanced network, @Home offers consumers open access to any content available on any site on the Internet, at no additional charge to customers or ISPs. In addition to open access to Internet sites, a cable broadband customer can choose to bypass any @Home content. For example, an @Home customer can install on his or her desktop an icon that accesses the Internet directly via Yahoo!, Netscape, Bloomberg or any other web site or portal (at no additional cost). Subscribers can also access America Online through

AOL's "bring-your-own-access" plan by paying $9.95 to AOL and clicking on the AOL icon on their computer desktop.

**2. Are there other measures that the City should consider to further protect citizens' access to information over the Internet?**

No. The click through method is the simplest and most effective way to protect citizen's access to information over the Internet.

**3. How can the City address the concerns regarding restrictions on access to certain types of content, such as video streaming, or certain types of uses of high-speed Internet services?**

The distribution agreement between AT&T and Excite@Home contains limitations on video streaming. Video "streaming" traffic is notorious for causing congestion on the Internet. Limitations on video streaming make perfect sense in light of the bandwidth-intensive characteristics of such traffic because they help ensure the ability of Excite@Home and its cable partners to manage bandwidth use. Until standards for managing bandwidth are developed and bandwidth consumption can be measured and priced to reflect higher usage, a limit on overall traffic helps reduce the "tragedy of the commons" that would otherwise ensue. The best way for the City to address these concerns is to continue to encourage high-speed competition and multiple service alternatives. The City cannot effectively regulate this area because it impacts the very heart of the systems management controls that must be available to the cable operator in a shared bandwidth environment.

**4. Do some of the restrictions perform a network management function?**

Yes. As discussed above, limits on video streaming are used to manage bandwidth use to ensure quality broadband services for all users.

### 5. If so, could the same network management function be accomplished in a less obtrusive way?

As discussed above, these streaming limitations were an effort to ensure the ability of Excite@Home and its cable partners to manage bandwidth use. Because these limitations were devised before the Excite@Home service was actually available, they are wholly anticipatory by their nature and represent a somewhat generalized effort to address concerns that widespread, simultaneous, video streaming could slow the delivery of broadband service to all subscribers. Of course, as standards for managing bandwidth are developed that allow bandwidth consumption to be measured and priced to reflect higher usage, such limitations could be reconsidered and modified.

### 6. How can the City help protect consumers' privacy?

Regulatory action by the City concerning consumer privacy on the Internet appears to be well beyond the scope of the Board's resolution and raises many troubling issues. The Internet has flourished due in large part to the free exchange of information and its unlimited capacity. No local regulation by the City can possibly reach or effectively constrain information that is available on the Internet and should not attempt to do so. More importantly, regulation — at least with respect to AT&T — is already in place. Cable operators have an obligation under section 631 of the Federal Communications Act to protect subscriber privacy (47 U.S.C. § 551).

### 7. To what extent are these concerns addressed by a requirement to provide non-discriminatory access to unaffiliated ISPs?

These concerns would be exacerbated, not addressed, by forced access. For all the reasons explained above, technical as well as financial, forced access will lead to decreased consumer access to Internet content, at higher prices.

### 8. To what extent do the alleged "content bias" associated with Excite@Home's implementation of network performance features exist and what role should the City play to mitigate these problems?

The alleged "content bias" is based upon a misunderstanding of @Home's caching functions. @Home, in order to increase availability of information and speed of access to its customers, caches commonly or repeatedly accessed information (including content from unaffiliated sources), which provides access on a "shortcut" basis (by downloading the site off the internet and caching it at a regional location). Rather than indicate content bias, these functionalities are one way in which @Home tries to enhance its high-speed service for all content. Moreover, there is no "content bias" in the retention of cached data. Excite@Home uses an algorithmic equation based on customers' traffic patterns, known as the "least recently used," or LRU, algorithm. That algorithm eliminates cached data on an automatic basis, and does not manipulate or favor any particular content.

## VI. CONCLUSION

The free market for Internet access and content is working to provide San Francisco consumers with many choices for Internet access, at normal and high speeds, as well as upon access to all Internet content. There is simply no need for San Francisco or any government entity to impose an unbundling requirement on cable operators. In fact, as shown above, the imposition of such a requirement would significantly harm consumers by eliminating or reducing the current strong incentives for investment, stifling technological development and service innovation, diminishing competition, increasing consumer prices, entangling local regulators in a morass of costly and burdensome price regulation, and ultimately undermining the value of cable broadband services. San Francisco should exercise "vigilant restraint", which will benefit consumers in San Francisco who are, and will continue to be, best served by the current regulatory approach.

Respectfully submitted,

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# APPENDIX TO COMMENTS OF AT&T CORP. IN RESPONSE TO OPEN ACCESS REQUEST FOR INFORMATION

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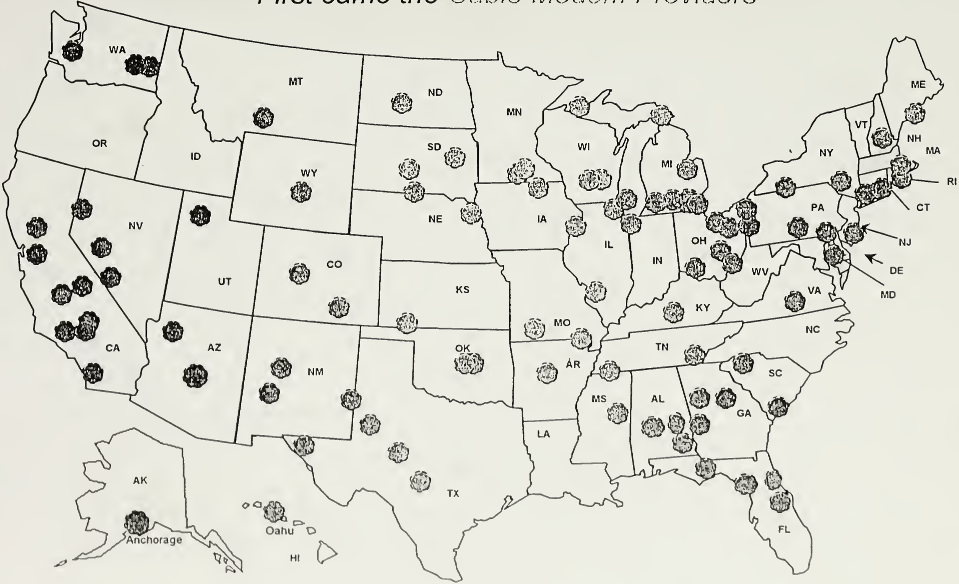
# What Competition Does to Broadband Deployment

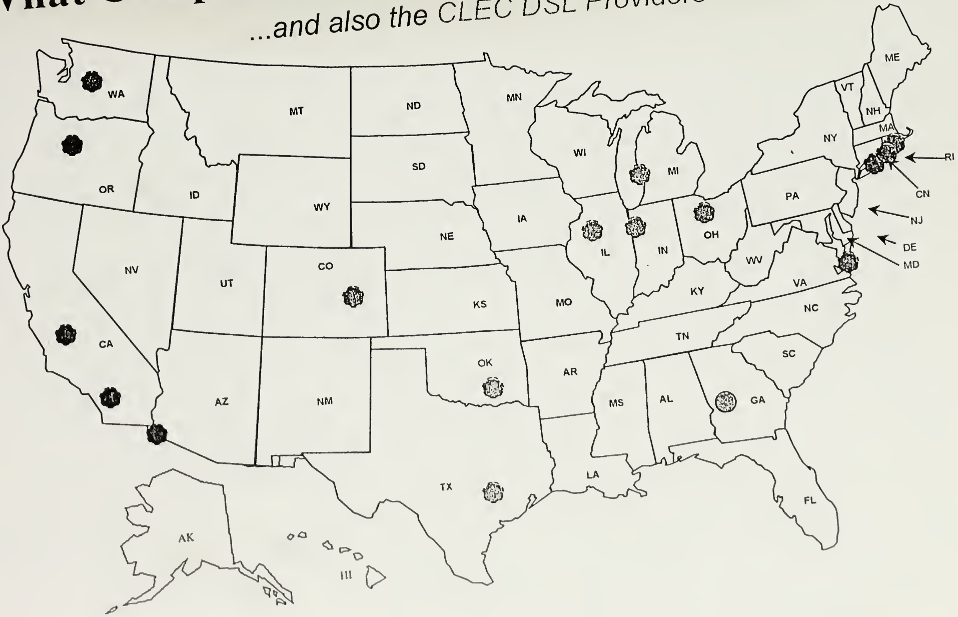
## *First came the Cable Modem Providers*



*As of June 1998.*

# What Competition Does to Broadband Deployment

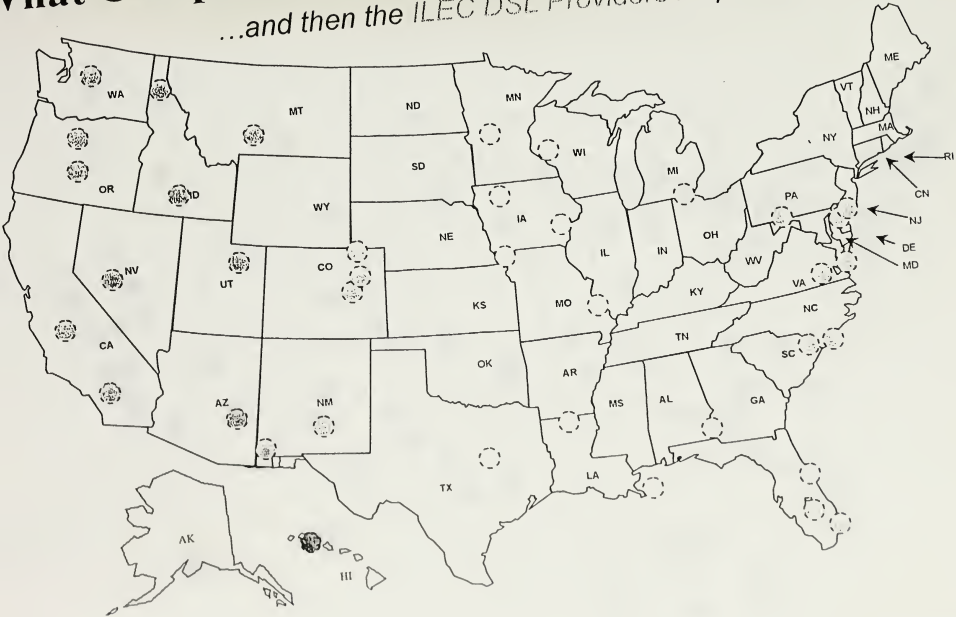
## ...and also the CLEC DSL Providers



As of June 1998.

# What Competition Does to Broadband

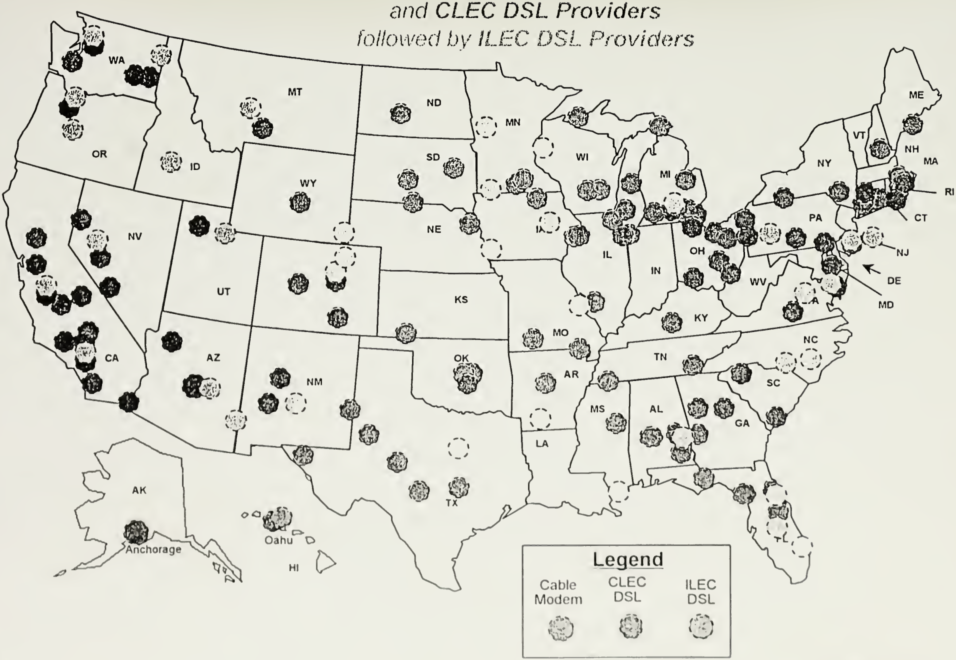
*...and then the ILEC DSL Providers responded*



As of June 1998.

# What Competition Does to Broadband Deployment

*Cable Modem Providers*
*and CLEC DSL Providers*
*followed by ILEC DSL Providers*



*As of June 1998.*

# Economic Concerns Regarding Unbundling Broadband Cable Internet Access

March 19, 1999

Joseph Farrell

Joseph Farrell

My name is Joseph Farrell. I am Professor of Economics at the University of California, Berkeley. I am also Affiliate Professor of Business, and an affiliate of the Center for Regulatory Policy, and of the Center for Law and Technology, at Berkeley. My academic research has included work on competition policy and telecommunications, among other topics in microeconomics. I am also Editor of the *Journal of Industrial Economics*, and a former President of the Industrial Organization Society.

From January 1996 to June 1997 I was on leave from Berkeley and served as Chief Economist at the Federal Communications Commission (FCC), reporting directly to the Chairman and Commissioners. At the FCC, I took a leading role in extensive discussions of the regulated unbundling of the networks of the historical local telephone monopolies, as mandated by the Telecommunications Act of 1996, which was signed into law shortly after I began my term as Chief Economist. Among my relevant publications are "Prospects for Deregulation in Telecommunications" (*Industrial and Corporate Change*, December 1997), and "Public Policy and Private Investment in Advanced Telecommunications Infrastructure" (co-authored with another former FCC Chief Economist, Michael L. Katz: *IEEE Communications Magazine*, July 1998). Both of these articles discuss unbundling policy, among other issues.

I have recently been asked by AT&T to provide a brief overview of the economic rationale for the unbundling required of incumbent local telephone exchange carrier networks under the Telecommunications Act of 1996, and to contrast it with the circumstances regarding possible unbundling of the data transport capabilities of coaxial

cable infrastructure. As I discuss below, there are cogent reasons to think that the latter is a poor candidate for unbundling policy. In a nutshell, the economics of unbundling ILEC networks are based on two classes of legitimate reasons for mandatory unbundling: correcting mispricing and other distortions that are due to other forms of regulation, and facilitating entry into a market where an incumbent possesses a bottleneck. Neither appears to apply in the case of broadband cable access unbundling.

## An Economic Basis for Mandated Unbundling: Correcting Regulatory Mispricing

In traditional voice telephony, regulation has (for a variety of historical reasons) created a shambles of cross-subsidies and inefficient pricing patterns. Reforming this at the retail level has proven extraordinarily difficult both administratively and politically. One role of unbundling policy in telephony is to provide a channel for the market to relatively quickly correct these regulatory mispricings.

A basic pricing problem in traditional telephony is that a large share of the costs of a telephone network, such as the costs of loops (wires) and switches, are "common" to many different services. This means that setting efficient prices for those services to recover those costs is not simply a matter of having prices "reflect costs," because prices set equal to incremental costs *of services* fail to cover all costs. While economics offers clear direction as to how to set service prices to cover such common costs in an efficient manner, such directions have not always been closely followed in practice; rather, regulators have imposed somewhat arbitrary pricing structures. The efficiency costs of such pricing policies have been estimated at billions of dollars annually.

While many telephony network costs are common among *services*, it appears that costs can be much more cleanly broken down by "network element" – that is, into loop costs, switch costs, transport costs, etc. An alternative form of regulation, therefore, which could repair and/or avoid the problems of historical mispricing of services, is to make unbundled network elements available at cost-based regulated prices to a host of competitors. Such competitors, once able to share in the incumbents' economies of scale and scope, can then better compete on pricing structures as well as on other dimensions.[1]

Unbundling ILEC infrastructure in this way is undeniably intrusive (at least to the incumbent), and potentially costly and complex in its execution from both a regulatory and industry perspective. But it has important potential public interest benefits, because it helps to reform price regulation while the local exchange and exchange access bottleneck persists. In contrast, there appear to be no similar benefits in the case of broadband cable access: retail prices in this area have not been historically regulated on a cost-of-service basis, nor have they been made to deviate from economically efficient pricing principles through such regulatory mechanisms as residual pricing or the use of economically inefficient cross-subsidies.

---

[1] See for instance my discussion at pages 208-209 in "Creating Local Competition," *Federal Communications Law Journal*, November 1996 (reflecting a speech I gave at the FCC in May 1996, three months after passage of the Telecommunications Act). See also pp. 730-731 in my "Prospects for Deregulation in Telecommunications," *Industrial and Corporate Change*, December 1997.

Joseph Farrell

## An Economic Basis for Mandated Unbundling: Preventing Regulation-Induced Inefficient Leverage

A second, and related, reason to unbundle the historical local telephone monopolies' networks also stems from monopoly rate regulation, and therefore also does not apply to cable access. This is that rate regulation itself can create incentives for inefficient bundling – and hence, potentially, a valid reason for mandating unbundling, despite its problems.

The telephone monopolies' core products are regulated (at a price below the profit-maximizing price). Consider what happens when such a monopoly is allowed also to operate in a related but separate and unregulated product market in which it faces competition from firms that depend on its cooperation. This is a complex topic, but such a firm very often has an incentive to evade regulation of its core product by hindering competitors in the related market: it may thus be able to take some of the excess profits that regulation prevents it from taking in its core market.

It is important to note that this inefficient incentive to bundle *is largely created by that regulation.* To understand this fundamental economic point, consider what happens if a firm selling an *un*regulated product (say, cars) inefficiently withholds cooperation from unaffiliated radio manufacturers so that their products will not fit in its dashboards. Not only do consumers have the alternative of buying some other brand of car, but even if they did not, it is very far from clear that the auto manufacturer could increase its profits by charging (say) an extra $1 over the competitive price for the radio. Of course, it

could charge more for the radio if it chose, but the marginal customer who is willing to pay a certain amount for a car with radio would then just be less willing to spend on the car itself. This argument, that a firm cannot gain by inefficiently excluding competitors from a subsidiary product, is not absolute and iron-clad, but it forms a very reasonable basis for our usual free-enterprise assumption that firms may choose what is included in their products and what is bought separately.

But notice that the argument fails completely if the "car" market is regulated: then, charging an extra $1 for the radio does *not* reduce the amount the firm can charge for the car, because consumers would have been willing to pay much more than the permitted price for the car.[2] For this reason there is a real threat of inefficient leveraging by a regulated monopoly into a competitive market where competitors depend on the monopolist for access.[3] In the telephony context, this is most often discussed in terms of the historic local monopolies leveraging into long-distance.

It is in part for this reason that the old Bell System was broken up by the Modification of Final Judgment (MFJ) in 1982, and that the Telecommunications Act preserves the MFJ's ban on Bell Operating Company (BOC) entry into long-distance until local markets are open to competition.

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[2] Strictly, of course, the marginal consumer is willing to pay less – but the loss of demand from holding the "car" price fixed is not enough to punish the increase in the overall price, as it is in the unregulated case. Thus the price increase remains profitable.

[3] As I recently discussed at a California Public Utilities Commission forum, this fact links vertical structural (de)regulation with pricing (de)regulation. Invited address, "Horizontal and Vertical Issues in (De)Regulation," Office of Ratepayer Advocates and CPUC, March 11, 1999.

One reasonable means of mitigating attempted discrimination of this type is to require effective unbundling of the BOCs' bottleneck facilities before they are permitted to enter the long distance market. If competitors can obtain these bottleneck facilities on an unbundled basis, any attempted discrimination in long distance could be promptly punished because consumers would have other full line competitors from which to choose – who would not otherwise have had a viable means of rapidly entering the market in competition with the incumbents. This is an important part of the reason why Section 271 of the Telecommunications Act links links BOC entry into long distance with the implementation of the Act's market-opening provisions.

Thus, despite the imperfections of the unbundling mechanism, there are at least reasons to try it in the local telecom market. In contrast to the local telephony market, though, the price of cable broadband data transport is unregulated. As a result, there is no corresponding motive for anticompetitive discrimination -- and no corresponding benefit from unbundling. Therefore, this rationale for unbundling simply does not apply.

## An Economic Basis for Mandated Unbundling: Facilitate Entry Into Bottleneck

Another set of reasons supporting unbundling does not directly relate to rate regulation, but instead is closer to conventional competition policy. This is the possibility that unbundling a bottleneck can protect, and even create, competition in the use of the unbundled facility, which accelerates or facilitates competitive entry that opens up the bottleneck itself. Unbundling can thus facilitate "gradual" entry that in due course

will hopefully remove the need for regulation (including unbundling). Again, this is one view of unbundling policy in conventional telecommunications.[4]

If indeed entry to compete against the bottleneck will be speeded by unbundling, then the owner of a monopoly bottleneck may bundle or tie its products just in order to prevent such entry by competitors. The economic logic of an unbundling requirement in this framework is to block such a monopoly-maintaining strategy. If there is no monopoly power, or if bundling will not slow entry into the monopoly, then this motive for inefficient bundling will not apply, and correspondingly this reason to mandate unbundling will not apply.

Could there be a monopoly maintenance argument that would support the mandatory unbundling of broadband data transport from ISP service? I have not had an opportunity to examine the market closely, but for the following reasons I believe the answer is no. First, there appears to be no monopoly in the data transport market: consumers have several alternatives to cable-based data transport (DSL service provided both by ILECs and by CLECs such as Covad; wireless services such as Ricochet and DirecPC; and narrowband access). Second, any monopoly maintenance argument would require that a potential entrant into data transport would be stymied by finding it difficult to hook up with a credible ISP partner. This is highly implausible: there are many ISPs (although most are currently accessed primarily via narrowband), and no apparent barriers to successful entry. Where ILECs and others have entered the broadband market, they do not appear to have faced particular problems finding or creating ISPs to work with.

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[4] See for instance section 4 of my "Prospects for Deregulation," op. cit.

## Economic Bases for Not Mandating Unbundling

As discussed above, the economic rationales for unbundling do not appear to apply in the case of cable-based data transport. Next, I turn to arguments against unbundling.

First, as discussed above, in the absence of regulation or a monopoly maintenance motive, there is normally a broad incentive for businesses to unbundle voluntarily where it is technically and economically efficient to do so. By the same token, if a business chooses to bundle, and neither regulation nor monopoly maintenance is a plausible explanation, this may very well indicate that bundling is efficient. Absent some clear showing that this efficient incentive is overcome by inefficient incentives specific to the situation at hand, this provides a strong reason not to regulate unbundling. From my experience of the regulatory process, I can attest that regulation can have undesirable and unintended consequences, quite apart from its administrative costs.

Second, regulated unbundling almost by definition decreases profitability. (After all, regulated unbundling means requiring the firm to do what it would not otherwise choose to do, at least on the commercial terms dictated by the regulator.) As a result, forced unbundling would reduce private incentives to upgrade the networks and to build out this new service. Economists generally agree that such effects are especially

important in the case of innovative assets.[5] This effect would of course be particularly strong if regulated unbundling also involved price regulation of some kind.

On the other hand, regulating unbundling *without* regulating prices is likely to constrain the seller's pricing *structure* without constraining its overall pricing *level*. In the case of pure (strict) complements, this is likely either to have no effect on pricing or to have an adverse effect both on consumers and on the firm, due to double marginalization.[6] To the extent that products are *not* strict complements, such a partial constraint is quite likely to hurt rather than help consumers directly, by limiting the seller's ability to set lower prices for more price-sensitive consumers. Predicting the net effect on efficiency, price *levels*, and consumer welfare of restrictions on pricing *structure* alone is complex and difficult. One should not expect that unbundling of that kind will lead to lower prices.

In summary, the economically valid reasons for mandating unbundling in certain special circumstances, which motivate the regulatory unbundling of ILECs' existing networks, appear not to apply to the case of broadband cable Internet access. Consequently, I believe that it would be bad policy to mandate unbundling in this case.

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[5] For this reason, I have argued (both while at the FCC and subsequently) that, absent compelling concerns, policymakers should consider using a less stringent application of the Telecommunications Act's unbundling provisions in connection with ILECs' innovative elements. See for instance p.734 of my "Prospects for Deregulation." See also the discussion in my article with Michael L. Katz, in *IEEE Communications*, July 1998.

[6] Double marginalization is the economic phenomenon whereby it is more efficient to have a single markup on a composite good than to have two or more markups. This has implications for pricing and for innovation in composite goods – that is, goods that can be thought of as composed of a number of ingredients used together.

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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| In the Matter of | ) | |
| | ) | |
| Joint Application of AT&T Corp. | ) | |
| and Tele-Communications, Inc. | ) | |
| for Transfer of Control to AT&T | ) | CS Docket No. 98-178 |
| of Licenses and Authorizations | ) | |
| Held by TCI and its Affiliates | ) | |
| Or Subsidiaries | ) | |

## AFFIDAVIT OF TIMOTHY KIRK MULRON

1. My name is Timothy Kirk Mulron. I am Director, Financial Planning and Analysis, At Home Corporation (At Home). In that capacity I have personal knowledge of At Home's penetration rate as well as At Home's financial plans and pricing strategies.

2. As of September 30, 1998, a total of 10 million homes in North America have access to upgraded cable plant and can thus order At Home's service. As of that date, 210,000 households have ordered At Home service, thus yielding an overall penetration rate of 2.1% Of those 210,000 At Home users, 23,000 are TCI subscribers. It is my understanding that to date only approximately 1.4 million of the 23 million homes passed by TCI have been upgraded with two-way upgraded plant (or roughly 6% of TCI passed homes).

3. In addition to a share of the subscriber fees collected by the cable operators who offer the At Home service, At Home receives significant advertising revenue, much of it tied to the proprietary content At Home provides. As At Home's user base increases, At Home expects that its content-linked advertising revenue will come to represent an increasingly larger share of At Home's total revenue stream. Indeed, because the advertising revenue that At Home receives has a fairly high margin, At Home's financial plans are premised on that expectation. The content that At Home provides thus is expected to pay for a significant share of At Home's costs and investments.

4. By contrast, if At Home were required to sell internet access service stripped of proprietary content it would lose a significant revenue source.

I declare under penalty of perjury that the foregoing is true and correct. Executed on November 12, 1998 in Redwood City, CA.

Timothy Kirk Mulron

# Declaration of Professors Janusz A. Ordover and Robert D. Willig

1. I (Janusz A. Ordover) am a Professor of Economics and Director of the MA Program at New York University, New York City, NY 10003.
2. I received my Ph.D. in Economics with the Highest Distinction from Columbia University in 1973. Since that time, I have engaged in extensive research in industrial organization economics and regulatory and antitrust economics. My writings on this subject have been published in numerous journals and books. In recognition of my work in this area, I was asked to serve as the Deputy Assistant Attorney General for Economics in the Department of Justice (1991-92). In that position, I led many merger reviews that employed and developed methodologies to define relevant markets in merger and other cases. I also have extensive experience in the analysis of competitive effects of business strategies, including tying and bundling.
3. I have been actively involved in the formulation of public policy in the telecommunications sector. In particular, on behalf of AT&T, I have submitted written and oral testimony to the Federal Communications Commission and to the state regulatory commissions in the mid-West, New England, and New York, on a number of issues, including the pricing of unbundled network elements and access to ILEC bottleneck facilities. My complete *curriculum vita* is attached as exhibit JAO-1.
4. I (Robert D. Willig) hold the position of Professor of Economics and Public Affairs at Princeton University, where I teach in the Economics Department and in the Woodrow Wilson School of Public and International Affairs. I served as Deputy Assistant Attorney General in the U.S. Department of Justice, Antitrust Division, from 1989 to 1991. Before joining the Princeton faculty in 1978, I was Supervisor in the Economics Research Department of Bell Laboratories. I received my Ph.D. in Economics from Stanford University in 1973, an M.S. in Operations Research from Stanford in 1968, and an A.B. from Harvard in 1967.
5. I have written, lectured and consulted widely on the subjects of industrial organization, the relationships between government and business, and domestic and international microeconomic policy. I was formerly a member of the Research Advisory Council of the American Enterprise Institute, a Member of the New Jersey Governor's Task Force on the

Market Pricing of Electricity, a Member of the Department of Defense Task Force on Defense Industry Consolidation, and a member of the editorial boards of the American Economic Review, the Journal of Industrial Economics, and the MIT Press Series on Regulation. I am an Associate of the Center for International Studies, and an elected Fellow of the Econometric Society.

6. I have been especially active in both theoretical and applied analysis of telecommunications issues. Since leaving Bell Laboratories, I have been a consultant to AT&T, Bell Atlantic, Telstra and New Zealand Telecom, and have testified before the U.S. Congress, the Federal Communications Commission, and the Public Utility Commissions of about a dozen states. I have been on governmental and privately supported missions involving telecommunications throughout South America, Canada, Europe, and Asia. I have written and testified on such subjects within telecommunications as the scope of competition, end-user service pricing and costing, unbundled access arrangements and pricing, the design of regulation and methodologies for assessing what activities should be subject to regulation, directory services, bypass arrangements, and network externalities and universal service. I have testified many times before the Federal Communications Commission in its process of promulgating rules to implement the Telecommunications Policy Act of 1996.

## I. Summary of Main Conclusions.

7. We were asked by AT&T to respond to the main economic conclusions in the two Declarations filed by Professor Jerry A. Hausman on behalf of America On Line ("AOL") We were also asked by AT&T to examine whether it would be in the public interest at this time to subject TCI's broadband "last mile" data transport to regulation that would force TCI/AT&T to offer access to its broadband last mile transport facilities on non-discriminatory and regulated terms to all potential customers, including competitors. (We shall use the term "common carrier" regulation for this sort of regulation here, although we recognize that this term has other meanings in other contexts.)

8. Our main conclusions are as follows:

    - It would be against the public interest to subject the parties' last mile broadband data transport facilities to any form of regulation at this time. It is against the public interest to impose "common carrier" obligations on TCI's broadband transport as a condition for approving the transaction because there is no reason to believe that TCI will have long-

run monopoly power in the provision of the relevant services and there is no reason to believe that TCI would have incentives and ability to abuse any such monopoly power

- Broadband last mile data transport over cable networks is a nascent technology whose success in the market place is far from assured. Consequently, imposing heavy-handed common carrier regulation on TCI could stymie the development of the technology
- In the absence of regulatory oversight, AT&T/TCI may well have appropriate private incentives to enter into commercial negotiations with ISPs and OSPs to implement efficient access to its fast data transport facilities. Moreover, antitrust laws can provide an effective check on TCI's pricing to the ISPs and OSPs, to the extent that such a check may be required to advert monopolization.
- "Common carrier" obligations are not necessary because AT&T/TCI does not have monopoly power in providing access to the Internet. Contrary to Professor Hausman, there is no evidence that broadband last mile data transport and narrowband last mile transport are in separate "antitrust" markets. Statistical analyses performed by Professor Hausman that purport to prove that broadband transport constitutes a separate antitrust market are poorly specified, inadequately described, and seemingly inapposite. It appears that these analyses may in fact contradict Hausman's key conclusion regarding the relevant market. Other available facts indicate that narrowband last mile transport competes directly with broadband last mile data transport.
- TCI is likely to be constrained by competition even within the unrealistically confined domain of broadband last mile data transport services. The future structure of broadband supply has not yet been determined. There are many likely competitors, including the ILECs, that are actively developing broadband transport services. It is wrong to base regulatory policy formulation on the unsubstantiated assumption that TCI will enjoy long-run monopoly power in the provision of broadband transport, and that it will have the ability and the incentives to abuse whatever power it may have.
- It is impossible to predict today what will prove to be, even in the next few years, the most effective, popular and profitable format and architecture for broadband service offerings. If it turns out that the most commercially desirable offering for TCI/ATT entails ISPs and OSPs having to "go through" @Home in order to provide their services,

it does not follow that such a policy would harm competition in the provision of Internet content or other Internet services.

- The assertion that such a policy would force subscribers to "pay twice" for content -- to @Home and also to AOL, for example -- is not grounded in sound economic analysis Such an assertion is meaningless rhetoric without a standard of comparison, which includes a view of the hypothetical price that TCI would set for broadband transport alone, without content. Professor Hausman suggests that TCI should be allowed to charge any price it wants for transport. If so, then TCI would likely only choose to bundle @Home if it would be beneficial to subscribers, and thereby profitable for TCI. In this case, subscribers would find it less expensive and more desirable to access AOL through @Home than through any alternative unbundled arrangements. If, instead, TCI would choose not to bundle @Home, it would be the result of an assessment that TCI could earn greater returns on its investment in broadband from access fees alone, to be paid by subscribers to AOL, among others. The fact of the matter is that while Professor Hausman is (correctly) espousing the principles of efficient component pricing, AOL is advocating regulated prices for TCI's broadband offerings, at below-compensatory levels.

We develop those points more fully in the rest of our Declaration.

## II. Broadband and Narrowband Last Mile Data Transport are Competing Products.

9. There are several undisputed advantages that broadband data transport over cable has in comparison with the traditional narrowband service. The first advantage is speed and bandwidth of transmission. The second advantage is that the connection to the Internet is "always on." However, the facts suggest that many consumers would find the combination of purchasing a LEC phone line in conjunction with dial-up internet access service more attractive than the integrated internet service provided by TCI (or any other cable company that upgraded its cable distribution system). Traditional dial up modem service is generally less expensive than TCI's @Home service, and uses customers' existing premises equipment (CPE).[1] Moreover, as AOL notes, (AOL comments, p. 32), purchasers of TCI's @Home service cannot use that service to access the internet or use e-mail from remote locations.

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[1] Customers who have already purchased a modem may not wish to discard that modem and purchase or lease a cable modem instead.

Finally, when customers choose to purchase a second phone line to use with a dial-up modem service, those customers can obviously use that second line for regular voice communication, as well as for a fax. By contrast, consumers who purchase TCI's internet service instead cannot use that capability to make phone calls, hook up a fax machine, or dial up to an employer's server.

10. Indeed, actual marketplace evidence appears to support the conclusion that narrowband service is an attractive substitute to broadband services for many consumers. We understand that although the "base of homes with access to two-way upgraded plant" who can therefore order @Home's programming today now stands at 10 million homes, @Home itself reports an overall penetration rate of only 2.1% as of September 30, 1998. (Mullion Aft., Page 2.) That is, only 210,000 homes out of 10 million have subscribed to cable modem service today. Id. By contrast, approximately 29 percent of all homes nationwide subscribe to some form of internet access service.[2] Thus, we can presume that approximately 2.9 million households in @Home's upgraded distribution area subscribe to internet service, as compared with 210,000 using internet cable service. This is solidly consistent with the surmise that, at the present time, narrowband is a successfully close demand substitute for broadband service.

11. Public statements by AOL reveal judgments about consumer demand that are indicative of the same conclusion. We understand that AOL's chief executive officer has predicted that in "five years" "seventy-five percent of the market will be narrowband because people want it to be as easy and inexpensive as possible."[3] We are likewise aware that AOL's Vice President and General Counsel, George Vradenburg, has publicly stated that the vast majority of AOL's customers have no need for access at speeds that are any greater than 28.8 kbps, and that AOL can take other steps (such as caching) to satisfy those customers who desire higher speed. Vradenburg likewise opined that in contrast to available narrowband offerings, broadband involves "pretty high" installation costs, are "pretty difficult" to install, and that customer demand for these high-priced alternatives is price sensitive.[4]

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[2] The Forrester Report Volume 4, Number 9, January, 1998, page 6, Figure 3.

[3] Power Lunch, Television Interview with Stave Case (CNBC Broadcast, September 28, 1998).

[4] See Transcript of panel discussion between Peter Huber, moderator, and George Vradenburg, AOL, at Aspin Summit '98 (Cyberspace and the American Dream), August 25, 1998.

12. These judgments about demand add up to the conclusion that there is and will continue to be a great deal of demand cross-elasticity and opportunities for substitution between the two modes of transport, specifically for users of AOL, as well as for other consumers, for the foreseeable future. These are exactly the principal indicators that broadband access does not constitute a relevant market by itself, and that narrowband access must be included in the same relevant market for the assessment of whether TCI/AT&T would possess monopoly power and have the opportunity and incentive to monopolize by means of anticompetitive practices.

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Peter Huber, Moderator:

How does the bandwidth situation look from AOL's perspective?

George Vradenburg, Senior Vice President and General Counsel of AOL:

Well the market is about 25 million households. It is growing about 5 to 7 million a year. Consumers are continuing to sign on in somewhat of an excess of an average 28.8 kilobits; we are seeing that most of that, virtually 99% of that, is narrowband services and so customers are continuing to sign up and they are using the service. It went from about 12 minutes a day a few years ago to 45 minutes today. So their average usage, even as the growth in the number of consumers is going up, their average use is going up. Most of the applications are E-mail or chat or access to information, and only to a limited extent do they go to the web, and to the extent that we have a little problem in performance on the web, we do a lot of caching to compensate for that . So basically in terms of the growth of our business, there's sort of not a wall that we are seeing in terms of access.

Peter Huber, Moderator:

No bandwidth crisis at all! This is going to be a short panel. You foresee a crisis coming or are we in good shape?

George Vradenburg:

I think we have an opportunity coming down the pike, but for all the reasons that were described by Mr. Trujillo, there are a lot of new applications that are potentially available on high-speed connections, and I think the question is whether or not those high-speed bandwidth services are going to get rolled out. We're not seeing them rolled out very quickly now. They're going very, very slowly. There's a price sensitivity. There's still a technology uncertainty. There are still penetration doubts. As I say, the cost to install is still pretty high; pretty difficult. So we're seeing a fairly slow roll out on the high-speed pipes so far.

## III. Professor Hausman's Studies Do Not Prove That Broadband and Narrowband are in Separate Markets.

13. Professor Hausman attempts to discredit this plain market evidence with two econometric studies and vague claims about other unexhibited "various regression specifications." As they are described in Hausman's declaration, the studies are totally unsuccessful in attaining their goal. Moreover, surprisingly, Professor Hausman's descriptions of his econometric efforts are inadequate by normal professional standards. The specific equations that were estimated are not included, so that it is difficult to know just what are the claimed bases for the asserted conclusions. There is no reporting of the conventional diagnostic statistics that would assist the reader to assess the degree of power of the claimed statistical tests and the validity of the specifications. There is no reporting of the data that were analyzed to permit checking of the work, alternative tests, or even just informal assessments of whether the data are sufficiently informative for the claimed purposes. For example, without the reporting of the data, one has no basis for a judgment of whether there were sufficiently many significant enough differences in prices to induce noticeable consumer reactions in the sample.

14. The first test deployed by Professor Hausman is described as relating the price of broadband data transport to the price in the same region of narrowband data transport. While the price of narrowband data transport sounds like pertinent data, it turns out to be measured by Professor Hausman in terms of just the price of a plain old ("second") telephone line. Professor Hausman has no theory to explain the differences in prices for local residential service in his sample, so his estimated equations may be missing a number of salient explanatory variables, thereby potentially rendering the regression results quite meaningless

15. For example, it might be that richer suburban areas have both relatively low prices for phone lines (due to regulatory "cost-based" formulae) and relatively high prices for broadband due to the consumers' greater willingness to pay for the luxurious quality of these services. Here, the competition to broadband may well come from narrowband in all regions, but negative coefficients, like those found, would still be expected in Hausman's regression.

16. Of course, the price of a residential phone line is only partially related to the provision of narrowband data transport. One missing element as an offset to the price is the value to the consumer of having the second line for purposes other than data transport. This may net out much of the cost of the line, to a degree that is statistically noisy and perhaps related to

missing variables (such as the average income of the community). Another possibly important missing element is the cost of the calls from the residence to the ISP While these calls may incur no variable charges in some areas, they may be significantly expensive in other areas. The expected value of these costs may be inversely related to the size or density of the free calling area, which in turn may be positively related to the price of the phone line If so, the total expected cost to the consumer of narrowband data transport to the ISP (especially with the additional value of the second line netted out) might be uncorrelated or negatively correlated with the total price of the second line. Such a relationship could reverse the interpretation of Hausman's econometrics, so that a significant negative coefficient in his estimation would signify that broadband data transport prices tend to be higher where the total effective prices of narrowband data transport to the ISP are higher.

17. Indeed, a red flag should have been raised for Professor Hausman when he discovered that "the estimated coefficient of the last mile narrowband data transport price variable is always estimated to be negative, and is often found to be statistically significant." (Hausman econometrics declaration at 4, emphasis in the text.) If it were to be taken seriously, this finding is not indicative of an absence of competition between broadband and narrowband data transport. That would be consistent with a zero coefficient or an estimate that were not significantly different than zero. Rather, the finding of a statistically significant negative coefficient indicates that there is some other effect or unstated spurious correlation (like those possibilities described above) at work that was unexplained and unanticipated by Professor Hausman. This finding simply indicates that the analysis put forward by Professor Hausman is inadequate for the purpose. It does not validly support a conclusion that narrowband is not a close substitute for broadband data transport.

18. Professor Hausman's second econometric cut at the market definition issue purports to estimate the effect of narrowband prices on broadband internet service demand. As described in his declaration, the analysis actually accomplishes nothing of the sort. First, Professor Hausman constructs a variable that, from the description in his Declaration, sounds like a single number: a ratio of growth in subscription rates for AOL, between June and July 1998, in markets in which @Home or RoadRunner were present, to the growth in subscription rates for AOL in markets in which they were not present. Of course, it is impossible to run a regression where the variable to be explained does not vary. Presumably,

although we are forced to guess here by the inadequacy of his declaration, Professor Hausman calculates one such ratio for each of the 21 studied markets in which @Home or RoadRunner are present, where the growth rate in the market having @Home or Roadrunner is scaled down by the average growth rate in the markets without broadband service.[5]

19. Professor Hausman does not appear to consider what common underlying factors might have caused these different markets to fall into their categories of analysis. For example, it is plausible that TCI and Time Warner upgraded their cable facilities first in those markets with favorable demographics. These same demographics might also be associated with relatively high levels of growth of AOL subscription rates. Such mutual correlations with omitted demographic variables would invalidate the estimations discussed in the declaration. Hausman neither displays the data nor explains how they were even arrived at. – the declaration neglects to state whether the average growth calculated for markets without broadband service included all MSO-based areas, how was the average constructed, and whether as we surmise the same average is used to deflate each growth figure for each of the studied 21 markets with broadband service.
20. It is most curious that Professor Hausman interprets his dependent variable as demand for broadband Internet service. Recall that the numerator of this variable is the growth in the particular market's rate of subscription to AOL, and of course this is typically a narrowband internet service. If the denominator of this variable is, as we surmise absent a description in the declaration, a figure that does not vary across the 21 markets, then this variable on its face is positively related to narrowband internet service demand, not broadband as claimed. As such, all of the rhetorical interpretations offered in the declaration of Professor Hausman would be at least upside down. If, however, the denominator does somehow vary across the 21 markets, then the reader of the declaration can have no idea what the variable signifies, since the declaration is silent on how it does so vary.
21. At the most concrete level, none of these speculations about the meaning of the regression analysis matter at all. The discussed regressions (which are never displayed) give coefficients that are said to be imprecisely estimated. The coefficient on the narrowband price variable is

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[5] In the footnote, Professor Hausman interprets these regressions as a "difference-in-differences" regression. (Hausman decla at 5, n.4.) These regressions are notorious for giving imprecise results, because they eliminate much of the variation in the data and the variation that is left is often significantly contaminated with measurement error. This observation is consistent with the lack of statistical precision reported by Hausman.

small in absolute value and has a "large standard error." This is completely consistent with the true value of the coefficient being either positive or negative, and large So. what Professor Hausman serves up is a regression without a clear theoretical basis, with an ill-defined dependent variable, without plausible explanatory variables, and which gives no significant results. Nothing can be responsibly inferred about the subject at hand from such econometrics.

22. At a far more straightforward level, the data alluded to by Professor Hausman may be at least somewhat informative. It seems from the declaration that AOL found that the growth in its subscription rates was greater in areas without @Home and RoadRunner than it was in areas where one of the broadband services was available. Since AOL is largely a narrowband accessed service, this fact would be consistent with and help to support the finding that narrowband data transport to internet services is a substitute for broadband services like @Home. As already discussed above, other market evidence in this record indicates the same conclusion – that at the present time the prices of available broadband services are constrained by the prices and availability of the narrowband ISP services.

## IV. TCI Is Likely To Be Constrained By Competition Even Within the Unrealistically Confined Domain of Broadband Last Mile Data Transport Services

23. While it is clear that today broadband last mile data transport services compete with their narrowband counterparts, it is also clear that cable companies like TCI are far from alone in offering integrated broadband services.[6] While the clearest and most certain source of competition to TCI in this regard is from the RBOCs,[7] likely additional sources of competition include CLECs,[8] ISPs,[9] wireless providers,[10] satellite companies,[11] and others

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[6] US WEST at 11 (emphasis added).

[7] See Bell Atlantic 706 NOI Comments at 2; Bell South 706 NOI Comments at i, 17-37; GTE 706 NOI Comments at 10; SBC 706 NOI Comments at i, 5-7; US West 706 NOI Comments at 8-9.

[8] See Allegiance Telecom 706 NOI Comments at 3; Association for Local Telecommunications Services 706 NOI Comments at 9; DSL Access Telecommunications Alliance at 4; Intermedia Communications 706 NOI Comments at 11; Northpoint Communications 706 NOI Comments at 1.

[9] See AOL 706 NOI Comments; MindSpring 706 NOI Comments.

as well.[12/] Many of these rivalrous market participants are investing billions of dollars on timetables similar to TCI's to deploy broadband facilities and compete for customers Local exchange carriers in particular are aggressively deploying xDSL service to compete with cable's broadband service.[13/] Thus, as this marketplace develops and evolves, it is impossible to predict from today's vantage point who the leading competitors will be and how the competitive uncertainties concerning technologies, qualities and design of services, availabilities and prices will resolve.

24. The xDSL services that are currently being deployed and offered by the incumbent LECs alone constitute a significant and attractive commercial alternative to the internet cable services that TCI and others offer. The LECs' xDSL services substantially overlap in their key characteristics with the internet cable services. They both offer an "always on" connection, and the transmission speeds the LECs offer over their lines match, or even exceed, those offered by TCI. While @Home typically operates at speeds in the range of 1,500 to 3,000 Kbps,[14] both Bell Atlantic and US WEST offer services at speeds of up to 7 1 megabits per second.[15]

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[10/] See Cellular Telecommunications Industry Association 706 NOI Comments at 13-23; Personal Communications Industry Association 706 NOI Comments at 13-23; Teligent 706 NOI Comments at 4; Wireless Communications Association International 706 NOI Comments at 3-4

[11/] See Skybridge 706 NOI Comments at 2, 3; Teledesic 706 NOI Comments at 2.

[12/] See "Reaffirming demand for bandwidth, Telecom CEOs see AT&T's move to acquire TCI as costly approach," TR DAILY, Nov. 3, 1998 (noting how RCN Corp. is building a network to provide video, voice, and data services to residential customers in the Northeast).

[13/] See, e.g., BellSouth 706 NOI Comments at 13-14, GTE 706 NOI Comments at 10, US WEST 706 NOI Comments at 8-9, MediaOne 706 NOI Comments at 11-12, Appendix 1, NCTA 706 NOI Comments at 14-17. Bell Atlantic recently announced that it was introducing its Infospeed DSL service in selected East Coast markets, including Washington, D.C., and that over seven million subscribers on the East Coast will have access to Infospeed DSL service by the end of 1999. See, e.g., Bell Atlantic Introduces Infospeed DSL Service (Oct. 5, 1998) <http://www.ba.com/nr/1998/Oct/19981005001.html>; Introducing Bell Atlantic Infospeed DSL, Wall Street Journal, October 5, 1998 at C26.

[14] The World Wide Wait is Over, <http://www.home.net/home/speed.html>.

[15] Bell Atlantic Introduces Infospeed DSL Service to the Washington, D.C. and Pittsburgh Markets, http://www.ba.com/nr/1998/Oct/19981005001.html; Megabit Services General Product Descriptions, http://www.uswest.com/com/customers/interprise/.

25. The pace of the growing availability of DSL offerings is not significantly slower than that for cable internet services. US WEST today offers DSL services in dozens of communities in its service area, including Phoenix, Tucson, Denver, Colorado Springs, Boulder, Minneapolis-St. Paul, Portland, Seattle, and Salt Lake City.[16] Bell Atlantic has advertised that by next year it will be offering DSL services in every major city in the corridor between Washington, D.C. and Boston.[17] In fact, generally speaking, the LECs can upgrade any loops that are less than 18,000 feet long to provide DSL services with relatively little cost. Although longer loops will require additional investments by the LECs, these are analogous to the types of investment costs that TCI is incurring – e.g. deploying fiber closer to the home and thus extending the length of the loop without exceeding the maximum copper wire length.

26. Although AOL claims that the LECs have been slow in deploying their DSL services, AOL Comments, pp. 52-54, until the advent of internet cable service the LECs have had relatively little incentive to provide their own advanced services. TCI's deployment of cable internet services has spurred the LECs to accelerate their competing offerings, and to lower their prices. Any market dissatisfaction with the pace and appeal of LEC DSL offerings is a rationale for applauding the deployment of TCI's competing services, and a reminder that policy measures that repress or slow that deployment should be avoided.

27. Competition between TCI and the ILECs will promote consumer welfare. Unwarranted regulation should not stand in the way of procompetitive technological development. The market for broadband transport is just opening up. Its future structure is totally undecided. While in some markets, cable companies, including TCI have gained a competitive advantage, in others, the ILECs and other vendors have pulled ahead. The danger that the service will be monopolized by TCI is non-existent or at best remote.

## V. TCI Has Ample Economic Incentives to Offer Access to Its Broadband Transport on Economical Terms

28. The main reason for AOL's and others' demands for common carrier regulation of TCI's broadband last mile data transport is their concern that TCI will limit customers' ability to

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[16] www.uswest.com/com/customers/enterprise.

[17] www.bellatlantic.com.

access the Internet content of their choice.[18] In this section of our Declaration, we examine the economic soundness of these concerns. We conclude for several reasons that there is no support for such concerns as TCI will exert "vise-like control over the previously free-form and truly democratic medium of the Internet"[19] or TCI will "exercise disproportionate power over content matters, advancing its own editorial perspectives and discriminating against unaffiliated ISPs with a different viewpoint."[20]

29. Our analysis will show that TCI, like all other cable providers, has a strong financial incentive to offer a wide range of internet content to its customer base. This is because the attractiveness of its broadband offering depends not only on the speed with which the customer can receive information from the internet but also on what the customer can get from the internet when it gets there. This gives TCI an ample reason to accommodate any reasonable access requests by alternative content providers. If any such provider seeks to offer content that TCI's customers would find attractive, and the provider is willing to pay a compensatory access fee, it will be in TCI's interests voluntarily to come to agreement with the provider. In this regard, we understand that AT&T's Chairman has explained, "[c]ontent is essential to make money in networks. . . . And to invite as much content over that broadband set of network facilities is absolutely, Mr. Chairman, what we want to do."[21] As we shall see, AT&T's statements are consistent with standard economic theory, as discussed in the subsection below.

### V.(1) *Simple Economics of Foreclosure and Leveraging*

30. In order to understand TCI's incentives to grant access to its broadband facilities, it is best to start with a simple economic model in which the owner of the bottleneck has no

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[18] See, e.g., Consumers Union et al. at 11; MindSpring at 12-13.

[19] Consumers Union et al. at 13.

[20] MindSpring at 14.

[21] See Remarks of Michael Armstrong before the Federal Communications Commission's En Banc Hearing on Telecommunications Mergers ("FCC Mergers En Banc"), transcript at 25 (Oct. 22, 1998)

anticompetitive incentives to deny access. Since the Commission is likely very familiar with the model and its application to telecommunications, our discussion will be very brief[22]

31. Consider the owner of a bottleneck facility for broadband last mile data transport. This monopoly is restricted geographically, meaning that in other locales there is no broadband access to the internet or that other monopolists control such access. The bottleneck owner is also an internet content provider ("ICP"). The content market is highly competitive and characterized by a great deal of variety, inasmuch as consumers have differentiated tastes. The bottleneck owner's content is one of many choices potentially available to consumers. To complete the model, we may as well assume that the incremental cost of providing content to another subscriber is essentially zero, since most of the content costs are fixed (i.e., "first copy costs").

32. Assume that the bottleneck owner bundles its content with its access, and sells the package for some monthly subscription fee . Under this arrangement consumers cannot reach any other content through their subscription to the service. But is such an arrangement profit-maximizing? The answer is likely no, provided that there are some other sources of content that the bottleneck's actual and potential customers would find desirable. Indeed, by excluding the other content, the bottleneck owner diminishes the value of its scarce asset by some dollar amount that reflects the "average" consumer valuation of the available alternative sources of content.[23] The bottleneck owner can adopt two alternative strategies. One is to "unbundle" access from content and sell access and its content as standalone products with consumers purchasing additional content at whatever prices the content sells for. The second alternative is for the bottleneck owner to "bundle" access and its content and set the bundle price low enough to ensure that customers buy additional content but, simultaneously, high enough to capture for itself some of the additional value that consumers gain from being able to access many alternative sources of content. With some simplifying assumptions, it can be readily demonstrated that the bottleneck owner, competing

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[22] *See*, William J. Baumol and J. Gregory Sidak, Toward Competition in Local Telephony (MIT Press: Cambridge), 1994; Janusz A Ordover and Robert D. Willig, "An Economic Definition of Predation: Pricing and Product Innovation," Yale L. Journal, vol. 91, No. 1 (November 1981); Jean-Jacques Laffont and Jean Tirole, Competition in Telecommunications, (MIT Press: Cambridge), 1999 (forthcoming). Janusz A. Ordover and Robert D. Willig, "Access and Bundling in High-Technology Markets," in J. E. Eisenach and T. Leonard (eds), Competition, Innovation, and the Micorsoft Monopoly, Kluver Academic Publishing (1999, forthcoming).

[23] Consumers perceive these different sources as substitutes, albeit imperfect ones. Plainly, if the different contents were complements, the concern with exclusion would not arise at all.

content suppliers, and consumers are fully indifferent between these two strategies. That is, both strategies generate the same net benefits for consumers and profits for the suppliers.24

33. Our conclusion is consistent with the well-accepted proposition that if the owner of the bottleneck service can implement a perfect "price squeeze," it has the optimal efficiency incentives to grant its rivals access to the bottleneck. In effect, the squeeze ascribes to the bottleneck asset the full monopoly rents that are available in the relevant market. It follows that when the squeeze is not very effective, so that the bottleneck owner cannot extract all the rents, it may have private incentives to deny access and extract additional rents in some other way.25 For example, the price for the monopoly asset may be set by regulation at below its full value. Alternatively, by denying access the owner of the bottleneck may be able to earn additional monopoly profits in markets where the bottleneck asset has no monopoly value. This strategy is commonly referred to as leveraging of market power from the monopoly market to other, potentially competitive markets.

34. With this economic background, we can examine various claims made by AOL, Professor Hausman, and others regarding TCI's incentives to exclude competitive providers of content and the allegedly pernicious effects of "tying" of broadband last mile data access to content through the @Home ISP service.

V.(2) *There Are No Possibilities for Leveraging Broadband Access.*

35. As we have seen, "leveraging" provides one possible motivation for exclusion and other abuses of bottleneck market power. In the instant context, there are two putative "markets" to consider for assessing whether there are any conceivable possibilities for concerns over whether TCI could leverage its alleged market power. The first is the domain of internet content and the second is the domain of internet advertising.26 It is totally implausible that through @Home TCI would be able to gain market power in these putative markets.

36. For leveraging to create a competitive concern, it has to be demonstrated that broadband data transport is a separate market and that TCI has or will likely have significant market power in the provision of such access. As we have indicated above, at the present time broadband

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24 For a full exposition, *see* Ordover and Willig, "Access and Bundling in High-Technology Markets", note 30, above.

25 Our result holds even if the squeeze is not "perfect" provided that consumers ascribe significant value to the alternative sources of content. A perfect squeeze transfers all the rents to the bottleneck owner.

26 Actually, the only content at issue here is that which is proprietary to an ISP or an OSP (such as AOL). Non-proprietary content can always be reached once the subscriber accesses the world wide web with his or her browser.

access does not constitute a relevant market. Moreover, TCI faces (or is likely to face) significant competition in the provision of broadband access. Consequently, even if competitive content providers were completely precluded from accessing @Home's subscribers via TCI's broadband last mile data transport, they would still be able to access these consumers through other means. For example, even in those market areas where TCI might have the only broadband pipe, some @Home's subscribers are also likely to subscribe to AOL directly or to reach it by means of a narrowband ISP, or to regard these options as reasonable substitutes for @Home entirely. Moreover, because the @Home consumer base is still very small and is likely to constitute a small portion of all Internet subscribers, exclusion from such a small customer base -- even if it did occur -- would not significantly raise AOL's costs, thereby rendering it a less capable competitor or less attractive to consumers. Since any unique content of @Home service does not compete with AOL in those markets where there is no broadband access, it is quite implausible that an exclusionary strategy would be profitable. TCI would lose profits by making @Home less attractive and generate no additional profits because @Home's content cannot plausibly gain market power that could be profitable for TCI.

37. Internet advertising is another source of revenues earned by @Home. It is equally implausible that the market for advertising can be monopolized. Advertisers have many venues through which to reach consumers, of which the internet is only one. Even if TCI were to foreclose OSPs from broadband transport in its cable markets, this would have zero impact on @home's ability to charge supracompetitive rates for advertising on @Home's web page and content screens.

V(3). *Pricing of Unbundled Access Should Reflect the Full Opportunity Cost.*

38. Unbundling of broadband transport, which AOL and others are asking for, is meaningless in the absence of some rules that determine how unbundled transport can be priced. There are at least two possibilities. The first is to rely on arms' length commercial negotiations between TCI and those who seek access to set appropriate access fees. In the event that such a negotiation fails, the party demanding access could, in principle, seek an antitrust remedy under section 2 of the Sherman Act. To gain relief, the party seeking access would have to demonstrate that TCI has market or monopoly power in some relevant market(s). As demonstrated above, the action would fail at this step.

39. It is reasonable to inquire what prices would likely result from such arms' length commercial negotiations. As explained above, such prices would reflect at least the full opportunity cost of granting access. Here, this opportunity cost would reflect the net revenues that TCI would lose if a subscriber were to choose AOL, for example, rather than @Home, plus the direct cost to TCI of providing access to the rival OSP, plus the reduced value to TCI of its investment in @home. In particular, if a consumer were to switch from @Home to AOL through the provision of access, that would reduce the advertising revenue that @home would earn, thus reducing the profitability of At Home Corporation and hence the value of TCI's investment in At Home Corporation. In an arms-length bargaining situation the price that TCI would charge an entity like AOL for unbundled transport would thus be the full subscriber rate that TCI would lose if a subscriber were to choose AOL, plus the net diminished value of TCI's investment in At Home Corporation.

40. On the surface, it appears that AOL agrees with this analysis. We understand that AOL's basic claim is that its "open access" requirement is necessary to ensure that it can compete with TCI's @Home service on a level playing field. At the same time, AOL appears to claim that "open access" is not synonymous with price regulation of last -mile high speed data transport. (AOL at 34.) Professor Hausman, AOL's economic expert, likewise asserts that "[n]o one has called for price regulation of last mile high speed data transport by TCI and by other cable companies. TCI could still charge the (unregulated) profit maximizing price for last mile high speed data transport over its network." Hausman Aff., para. 16. He goes on to say that "no one is calling for the cable companies to be required to sell last mile high speed data transport at prices determined by TELRIC." (Hausman Aff., para. 18, p. 10.) But if not TELRIC then what? Frankly, neither AOL nor Professor Hausman clearly resolves the conundrum of what AOL seeks: how to square AOL's demand for open access with its protestations that price regulation is unnecessary. Scratching under the surface reveals that Professor Hausman and AOL are less than enthusiastic about TCI's pricing freedom.

### V(4). *The Current Access Arrangement Does Not Require AOL's Customers to "Pay Twice" for Access to Its Proprietary Content.*

41. Professor Hausman argues that because TCI ties "last mile high speed data transport and Internet access and other services" through its affiliate @Home, AOL customers have to pay twice for access to AOL's proprietary content. (Hausman Affidavit at 8.) Similarly, AOL

states that TCI forces @Home subscribers to "pay for two 'value-added' Internet services to get to the one source of online content they want."[27] AOL and Professor Hausman are wrong for two reasons.

42. First, we understand that today any @Home customer can "access AOL" through his or her TCP/IP connection, and that AOL itself actively markets such a connection as its "bring-your-own-access" plan ("BYOA plan").[28] We understand that the BYOA plan charges $9.95 per month, compared with the standard monthly charge of $21.95, and that the BYOA plan enables any customer, including @Home customers, to access AOL's content and features without paying AOL for contentless internet access. In sum, AOL can -- and does -- "unbundle" its service offering and charges separately for its content while letting consumers access it through @Home or any other means. This would greatly obviate the need for @Home to "unbundle" its service.

43. The second reason that AOL and Professor Hausman are wrong when they assert that if broadband transport were unbundled, consumers would not have to pay "twice," stems from our prior discussion of compensatory pricing. If AOL and Hausman are serious about letting TCI charge a profit-maximizing price for access, then they must acknowledge that such a price would appropriately and necessarily reflect all of the opportunity cost of providing access. It will be recalled that Professor Hausman clearly stated that access should not be priced at TSLRIC, which does not here include opportunity costs. Because @Home collects advertising revenues that are associated with the content it provides, the fact that it provides content enables @home to defray part of its network costs and investments. If @home did not provide content, it would have to recover the diminished advertising revenue elsewhere, or else reduce the scope of its network. If @home were a wholly owned entity within TCI, then TCI would presumably recover these lost revenues by raising the rates to subscribers for an @home service that did not include content, as compared with the current content-enriched programming.

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[27] AOL at 14 n.29.

[28] See "Top 20 AOL Member Questions," <http://aol.com/nethelp/top20memberquestions.html>.

44. Of course, TCI and @home are separate corporations, and @home does not set the rate that subscribers pay. Instead, we understand that, as with cable programming generally, TCI purchases @home's programming and then delivers that internet service to its subscribers for a fee (a portion of which is remitted to @home). Nevertheless, TCI has a natural interest in ensuring the viability and attractiveness of the @home service, given that TCI has undertaken significant investments specifically geared to delivering @home's programming Thus, if @home were required to offer its internet access service stripped of content, that effect could well place upward pressure on the rates that TCI would for its own reasons choose to charge subscribers. Thus, the effect could be higher rates for consumers It is entirely plausible, therefore, that subscriber's might be better off in the long run by buying the full @Home service plus paying the AOL BYOA rate, as compared with purchasing an @home service that provided only internet access from TCI and paying whatever fees AOL would charge on top of it.29

### V(5). *Current Financial Arrangements Between TCI and @Home Are Not Pertinent to the Pricing of Unbundled Transport.*

45. From this discussion it follows that neither Professor Hausman nor AOL are fully serious about allowing TCI to charge a profit-maximizing price for "unbundled" broadband transport. Indeed, Professor Hausman suggests that the price that should be established is the price that @Home "pays" to TCI for access. (Hausman Affidavit at para. 16.) In this he commits two errors. The minor error is a factual one: @Home does not "buy" access from TCI. The two entities -- TCI and @Home -- share the per-subscriber fee, which is independently set by TCI, according to a negotiated formula.

46. The more important error is an analytical one. Professor Hausman assumes that the split is determined by the same business considerations that would be pertinent in the event that TCI had to offer "unbundled" broadband transport to a rival supplier of content. The current revenue split provides no such guidance because TCI has an ownership interest in @Home. While TCI is not a 100% owner, it does have an ownership claim on a 40% share of the net revenues earned by @Home. If TCI were a sole owner, it would be totally indifferent -- barring some tax complications -- as to how the revenues were actually divided between TCI

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29 We do not assume that a customer would procure access. Rather, the full rate for AOL would include the cost of broadband transport which would be procured by AOL.

and @Home. To the extent that such division matters now to TCI stems from the fact that profits booked at @Home have to be shared with other owners of the service Thus, in proffering the current split as a benchmark for pricing unbundled access, Professor Hausman confuses internal "transfer prices" with access prices that would emerge from commercial arms' length negotiations between a vertically integrated supplier of a service and unintegrated rivals. This Commission is well-aware that internal transfer prices can be manipulated in a myriad of ways, not all of which are likely to benefit the rival.30

## IV "Common Carrier" Regulation of Broadband Last Mile Data Transport Is Unnecessary And Not In the Public Interest.

47. Despite their protestations, neither Professor Hausman nor AOL have advanced a workable proposal for how unbundled broadband access should be priced. In their hands, unrestricted profit-maximization quickly turns into an empty slogan. In fact, their demand to unbundle broadband transport will engender intrusive regulation of an emerging new service that requires massive entrepreneurial investments and whose marketplace success is far from assured. Such regulation is especially inappropriate since, as we have explained above, TCI and AT&T have now all the incentives to allow @Home's subscribers to access all the content that is economically available on the world wide web, including proprietary content provided by ISPs and OSPs.

48. Indeed, for @Home and other like services to succeed, they will have to deliver content that is worth viewing. As one commentator notes, "the key worry with launching broadband services is that nobody will develop any content for them until there are subscribers to finance it, but nobody will subscribe until there is content to justify the cost of higher speeds."31 This need to develop and encourage content worth viewing at high speeds offers a strong stimulus to open broadband to all content providers. Foreclosure is presently deadly to a broadband ISP because it narrows the scope of the available content and, at the same time, constricts the base of potential customers for the service.

49. Forced unbundling with its attendant regulatory uncertainty would likely slow down the investment in the development of broadband last mile data transport. Investing under the shadow of uncertain regulatory rules in an innovative service only exacerbates the already

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30 *See*, Baumol and Sidak, op.cit., for the need for imputation tests aimed at detecting anticompetitive exclusion through overpricing of a bottleneck asset.

substantial risks associated with that investment. When an investor can be subjected to unanticipated regulatory constraints on its pricing or be required to sell its services at rates that do not reflect proper economic costs, the incentives to invest are potentially undermined TCI and other cable companies did not sink hundreds of millions of dollars into upgrading their networks on the assumption that they will be forced to "unbundle" transport if it is not in their private economic interest to do so.

50. It must be recognized at this juncture that it cannot be reliably predicted what will prove to be the most effective, popular and profitable format and architecture for broadband service offerings. In particular, whatever are current prognostications, it is unknown today whether unbundled transport on appropriate terms might, as this new marketplace evolves, become a commercially desirable offering for TCI/ATT, or whether, on the other hand, demand for pure transport will even exist in meaningful or significant ways in the future. This inevitable uncertainty makes it all the more important for the public interest that the Commission leave it to the companies themselves to decide on their business strategies. These is no doubt that decentralized entrepreneurship is far and away the best process for generating new options for the utilization of broadband capabilities, and for the needed sorting out among them. Instead of direct regulation of cable companies, there are plenty of other forces and safeguards -- such as the private interests of the cable companies themselves, and competition from the ILECs -- that can be expected to ensure access to the broadband networks by providers of Internet content, so long as that access is efficient and consistent with consumers' demands.

51. The creative, efficient, and desirable evolution of cable company broadband offerings would also be endangered by unnecessary regulation of pricing. The needed entrepreneurship and investments would be predictably stultified and distorted by the challenges to pricing that are typical under regulation -- on grounds of being discriminatory, excessive, self-preferential or entailing cross-subsidies among different services that will commonly utilize the broadband network being built by the cable companies. With possibly significant joint and common costs in the broadband network, their recovery from the various services utilizing the network would likely require a complex of differential pricing terms, and maximal utilization and consumer welfare would mandate the commercial flexibility to find and implement them.

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31 Tim Jackson, "Breaking the internet's shackles," Financial Times, 11/9/1998, p. 12.

Unnecessary price regulation would inevitably elevate already difficult levels of investment risk, rigidify marketing and constrain Ramsey-pricing, and generally retard or even prevent the development and success of broadband cable offerings.

52. Regulation is a solution of last resort to a clear-cut danger that the owner of a genuine bottleneck will abuse its monopoly power. There is no evidence or other reason to believe that TCI now has or is likely to have monopoly power arising from its supply of broadband last mile data transport, or that it will have any incentive to abuse whatever market power it might have. This being so, the Commission should refrain from imposing "common carrier" or other forms of price regulation on TCI and AT&T as a condition for approving the transaction.

I declare under penalty of perjury that the foregoing is true and accurate.

Executed on November 12, 1998 in New Canaan, Connecticut

Janusz A. Ordover

I declare under penalty of perjury that the foregoing is true and correct.

Executed on November 12, 1998, in Princeton New Jersey.

Robert D. Willig

Robert D. Willig

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MEMORANDUM

March 19, 1999

TO: AT&T

FROM: Rachelle Chong, Partner and Former Commissioner of the Federal Communications Commission

RE: Cable "Open Access" Issue: A Federal Regulatory Perspective

I am responding to your request that I provide my perspective on the argument by competing Internet access and on-line service providers for mandated "open access" or the "unbundling" of TCI's broadband data platform on its cable systems.

## I. Summary

As a former federal regulator of telecommunications and cable companies, it is my view that ordering "open access" of cable broadband networks is unnecessary as a matter of public policy and would be potentially harmful to consumers. As the Federal Communications Commission ("FCC") recently concluded, broadband markets are developing in a timely manner. The FCC specifically considered and rejected the notion of ordering open access for cable broadband systems, noting that multiple methods of increasing bandwidth are now, or soon will be made, available to a broad range of customers. Just a month ago, the FCC also declined to impose an open access obligation on AT&T-TCI as a condition of its merger.

Moreover, unbundling cable broadband networks is not analogous to the unbundling of the local telephone "bottleneck" networks mandated by the Telecommunications Act of 1996[1] ("1996 Act"). The unbundling of the local telephone "bottleneck" is a unique event predicated by years of monopoly regulation of local telephone service. In contrast, as discussed above, there are no "bottlenecks" or "monopolies" in the nascent broadband market that require regulatory intervention.

I further believe that ordering unbundling for cable broadband networks would be unwise as a matter of public policy because it would discourage facilities-based investment in the developing broadband market by other industry players to the ultimate detriment of consumers, and would not be technology neutral contrary to principles set forth in the 1996 Act and adopted

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[1] Pub. L. No. 104-104, 110 Stat. 456, codified at 47 U.S.C. §§ 151 *et seq.* ("1996 Act").

by the FCC. Finally, ordering unbundling of cable broadband networks would be contrary to Congress' stated policy that the Internet should be regulated as little as possible.[2]

## II. Qualifications

I am a partner of the law firm of Coudert Brothers, where I specialize in telecommunications, cable television, and Internet law. I served as a Commissioner of the Federal Communications Commission from May 1994 to November 1997. In that capacity, I was responsible for the implementation of the 1996 Act and in overseeing federal regulation of cable television operators and the telephone industry, among other duties. I hold a law degree from UC Hastings College of the Law, and dual undergraduate B.A. degrees from UC Berkeley. I am a member in good standing of the state bars of California and the District of Columbia. I am a frequent speaker on telecommunications topics at national and international conferences.

## III. The Mandated Unbundling of the Telephone Local Exchange Network Is Not a Basis for Ordering Open Access of Cable Broadband Networks

As a matter of national telecommunications policy, it is my view that mandating "open access" or the "unbundling" of cable broadband networks[3] is unnecessary as a matter of public policy and would be potentially harmful to consumers. Such an action would be contrary to years of efforts by the U.S. government, the FCC and dozens of state utility commissions to introduce competition in all communications markets in America. Some have argued that if mandated unbundling of the local telephone bottlenecks of the Bell Operating Companies (BOCs) is good public policy, then forced unbundling of cable broadband networks must be as well. It is my view that requiring open access to cable broadband networks is not analogous to efforts by U.S. policymakers to open up the local telephone "bottleneck" or "last mile" for the reasons explained below.

The requirement of the 1996 Act that Bell Operating Companies (BOCs)[4] unbundle certain portions of their telephone networks comes at the end of a unique era of U.S. telephone regulatory history. Prior to the break up of the Bell System by a divestiture decree in 1983, the telephone market could be most simply described as monopolistic local exchanges interconnected among each other by long distance wires and connected through switched wires to subscribers' telephones. The local exchange carrier (the local telephone company) traditionally had exclusive control of the "local loop," which is the physical wires that run from the subscriber's telephone to the telephone company's central office.[5]

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[2] 47 U.S.C. § 230(b).

[3] By this, it is meant that the cable operator would be required to resell on a wholesale basis service on the broadband network to competitors (which may include Internet access or service providers and other competitors).

[4] The Bell Operating Companies (also called the "Baby Bells" or "Regional Bell Operating Companies") include SBC Communications, Inc.("SBC"); Ameritech; US West, Inc.; BellSouth Corporation ("BellSouth"); and Bell Atlantic.

[5] The central office is the telephone company facility where subscriber lines are joined to switching equipment for connecting other subscribers to each other, for local and long distance services.

Historically, the local loop was considered a "natural monopoly" because it was believed that the costs of building duplicate local networks would greatly exceed the costs of simply having one local network. When telephone service was new, this belief that local telephone service was a natural monopoly caused the usually preferred American method of relying on competition to "regulate" the markets for goods and services to be considered untenable.[6] Thus, the telephone industry was heavily regulated as a monopoly.

Because the Bell System monopoly was so thoroughly integrated, from equipment to local loop to long distance, the prices charged for any one service did not necessarily have to reflect the costs of providing that service. The Bell System only had to make an overall profit, not a profit on every service. Numerous government sanctioned or mandated cross subsidies were inherent in its rates. For example, business rates subsidized residential rates, urban rates subsidized rural rates, and long distance subsidized local rates. One reason for the latter was the separations system, whereby the states -- who regulated intrastate telephone rates pursuant to the Communications Act of 1934 -- underpaid for the portions of the telephone system it used through a "separations and settlements" procedure, in order to keep local telephone rates low.[7] Political pressure was put on the state and federal regulators to keep basic rates for local telephone service low as a matter of public policy.[8] As a result, retail rates for local telephone service were distorted. This in turn discouraged new entrants from competing in the market, particularly for residential customers.

After World War II, technological advances transformed the industry. Satellites and microwave devices made possible wireless transmissions that can carry voice, data and video more cheaply and quickly than traditional copper wire used in telephone plant. The capacity of local telephone lines also have been increased through digital, rather than analog, processing of signals. Digital processing allows voice data to be compressed so that more "channels" are available in a conventional copper wire. Fiber optic wire, which carries much greater bandwidth than copper wire, is also being installed in many telephone plants today.[9] Since the Eighties, wireless phones have been successfully introduced to the public.

The break up of the Bell System resulted because of pressures to permit competition in producing and marketing telephones, switches and long distance services, and to permit the Bell System to compete with computer manufacturers and information providers in markets that were becoming similar to the market for telephone services.[10] In 1974, the government filed an antitrust suit against the Bell System. The government alleged that the Bell

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[6] Thomas G. Krattenmaker, Telecommunications Law and Policy 346 (2d ed. 1998).

[7] *Id.* at 348-49.

[8] This latter policy has come to be known as "universal service."

[9] *Id.* at 347, 355.

[10] *Id.* at 348-49.

system had used control of the local monopoly to disadvantage competitors.[11] The suit was settled by a court approved consent decree representing a negotiated settlement, now known as the Modified Final Judgment ("MFJ").[12] The break-up radically restructured the telephone industry and introduced new regulatory directions. The Bell System's successor company, AT&T, retained the long distance and international service lines of business. Seven new local exchange companies, who retained monopolies over local telephone service in distinct geographic areas called LATAs,[13] were spun off from the former Bell System. These new local exchange telephone providers were known as the Bell Operating Companies (the "BOCs"). The BOCs were restricted from the provision of long distance and information services; and the manufacture of telecommunications equipment.[14] The FCC then introduced competition to AT&T in the long distance market.

The central premise of the divestiture, and the complex regulatory scheme that has flowed from it, was that the provision of local telephone service was a monopoly. When Congress enacted the Telecommunications Act of 1996, it recognized that if competition was to be introduced in the long-regulated local telephone market, radical changes would be required to ensure and stimulate competition.[15] Hence, the new law ordered the "unbundling" of the networks of incumbent local exchange carriers ("ILECs", the largest of which are BOCs) to new competitors who want to serve the local telephone market.[16] The purpose of this requirement was to ensure that the monopoly ILECs fairly made available to competitors local loop facilities and services at a just and reasonable rate.[17] Thus, the mandated unbundling of the ILECs' loops is a direct response to the decades long monopoly control of the local loop.

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[11] The government argued that the Bell System had attempted to prevent competing long distance carriers and equipment manufacturers from gaining access to the local network or to delay that access, placing them in an inferior position as compared to the Bell System's own services; and (2) it used profits earned from the monopoly local telephone operations to subsidize its long distance and equipment businesses in which it was competing with other providers. *Id.* at 393 (citing *United States v. American Tel. & Tel. Co.*, 552 F. Supp. 131 (D.D.C. 1982), *aff'd*, 460 U.S. 1001 (1983)).

[12] *United States v. American Tel. & Tel. Co.*, 552 F. Supp. 131 (D.D.C. 1982), *aff'd*, 460 U.S. 1001 (1983) ("MFJ").

[13] The term "LATA" refers to a local access and transport area, which is defined as one of 161 local geographical areas in the U.S. within which a local telephone company may offer telecommunications services — local or long distance. Harry Newton, Newton's Telecom Dictionary 341 (11th ed.1996).

[14] Krattenmaker, at 394 (citing the MFJ).

[15] *Id.* at 427.

[16] Notably, the 1996 Act does not apply any of the above-described requirements as to unbundled network elements or access requirements on cable operators, who are regulated at the federal level under Title VI, a different part of the Communications Act.

[17] For example, the 1996 Act mandates that ILECs provide interconnection to any requesting telecommunications carrier at any technically feasible point, and it must be equal in quality to that provided by the ILEC to itself. ILECs must also provide requesting telecommunications carriers nondiscriminatory access to network elements on an unbundled basis. 47 U.S.C. § 251(c)(2) & (c)(3).

Prior to the 1996 Act, the BOCs were subject to various restrictions and obligations that flowed from the MFJ. Pursuant to the 1996 Act, the ILECs, including the BOCs, are obligated to undertake certain acts, such as unbundling, due to their former status as monopoly providers. In that sense, the local telephone market represents a regulatory anomaly when compared to other services that have developed pursuant to a competitive model of regulation. For example, the wireless telephone market, where the FCC initially licensed two carriers per market in the eighties and later allowed six more players with the introduction of Personal Communications Services (PCS), has been deemed the "poster child" of competition. Similarly, the now fiercely competitive long distance telephone market provides an example of a successful deregulatory model.

As to the new and growing area of broadband services, the market does not bring with it the history nor the monopolistic characteristics of the local telephone system. Whereas the local telephone system emerged from a highly regulatory atmosphere, the broadband market has developed in a highly unregulated and competition driven environment. Whereas the BOCs were essentially granted a monopoly over the local telephone system, actual and potential competition abounds with regards to broadband services and infrastructure, as will be discussed below. Regulations analogous to those imposed on the local telephone companies, then, have no place in the current broadband industry. In my view, the new competitive model dictated by the 1996 Act in all communications markets demonstrates a consensus among policymakers that the regulatory mind-set of old must be shed and a competitive environment promoted.

## IV. Difficult Convergence Issues Have Caused the FCC to Forbear from Imposing Traditional Regulation on Cable Broadband Networks

The evolution of technology has traditionally presented regulators with the need to reassess regulatory policies and update them as needed to better serve the public interest. As technologies blur the lines between different industries operating under different regulatory schemes, the challenge is even more complex. This issue long has been a subject of many complicated FCC proceedings. In the mid-1960s, the FCC decided that communications over telephone lines increasingly involved computers, both as to how a message is transmitted and switched, and the provision of data processing services to users.[18] The Commission conducted the *Computer Inquiry* proceedings beginning in 1966 that tried to separate the regulatory treatment of computers that were involved in the means of communication from the treatment of computers which perform data processing services. Two main issues were addressed: (1) the nature and extent of the regulatory jurisdiction to be applied to data processing services, and (2) whether and when common carriers should be allowed to engage in data processing. The focus of the FCC's efforts was to allow telephone companies to participate in competitive computer and data processing service markets, while protecting consumers and competitors against unlawful cross subsidization and interconnection discrimination through the establishment of competitive safeguards.[19]

What resulted was a series of decisions that classified all services offered over a telecommunications network as either "basic" or "enhanced." A basic service consisted of the offering, on a common carrier basis, of pure "transmission capacity for the movement of information."[20] In contrast, an enhanced service was defined as "any offering over the telecommunications network which is more than a basic transmission service."[21] The FCC further decided that enhanced service providers were not "common carriers" and hence, were not subject to regulation under Title II of the Communications Act.[22]

In addition to the disparate treatment of basic and enhanced services, there is differing regulatory treatment of providers, depending on whether they are a Title II common carrier, a cable operator licensed under Title VI, or a broadcaster regulated under Title III of the Communications Act. Common carriers like telephone companies must transmit information in a nondiscriminatory way, and have no editorial control over the information transmitted on their systems. Broadcasters must operate in the public interest with regard to the content they

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[18] Barbara Esbin, *Internet Over Cable: Defining the Future in Terms of the Past*, FCC OPP Working Paper Series No. 30, at Section III (Aug. 1998)(citing Robert Cannon, "What is the 'Enhanced Service Provider' Status of Internet Service Providers?", FCBA News, Feb. 1997, at 11)("Internet Over Cable").

[19] Esbin, at §VI.A.

[20] Amendment of Section 64.702 of the Commission's Rules and Regulations (Computer II), Final Decision, 77 FCC 2d 384, 419 (1980).

[21] *Id.* at 420.

[22] *Id.* at 430.

broadcast, and must meet standards for appropriate material over time (including indecency, public service programming, children's educational programming requirements, etc.). Because they were early competitors to broadcasters, cable operators escaped common carrier regulation[23] and, under Title VI, have had a fair amount of editorial discretion to select video programming.

As technology advances, services cannot readily be placed in one or another of these regulatory "boxes" set forth in the existing FCC laws and regulations. Technological advancements in fiber optic transmission of signals and compression of digital signals means future integrated networks will carry all kinds of signals as digital packets of information, breaking down the policy boundaries of the past and creating the need for new integrated policies. With converging technologies, products, media and industries, the computer, cable, telephone, broadcast, satellite and media entertainment industries are finding themselves part of a much larger marketplace. It is now expected that broadband platforms will be in the form of Internet based communications that contain voice, video and data transmission through use of open computer protocols and protocol processing.[24] Hence, the FCC is faced with the daunting task of deciding how such carriers should be regulated, if at all.

The regulation of cable broadband networks is an example of this dilemma. The pending question before the FCC is whether the application of "legacy" cable regulatory frameworks under Title VI, or Title II common carrier regulation, makes sense in the face of the rapidly evolving worldwide packet switched data network known as the Internet.[25] At this time, the FCC has taken a "wait and see" attitude, and has wisely declined to impose new common carrier-like regulation on such networks.

The FCC's decision does not surprise me for several reasons. First, Section 706 of the 1996 Act encourages investment in advanced information infrastructure, such as broadband networks.[26] In doing so, Section 706 empowers the FCC to forbear from regulation when it believes doing so is necessary to encourage investment in advanced services projects. Hence, the FCC clearly has a duty to encourage the building of systems like cable broadband systems, and to refrain from interfering with unnecessary regulation.

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[23] For example, rate regulation of cable service pursuant to the 1992 Cable Act is very different than that of local telephone service. Where no "effective competition" exists, the 1992 Cable Act authorizes, but does not require, local jurisdictions to regulate rates for the "basic tier" of cable service. The FCC has established standards for the localities' rate regulations. The FCC regulates the reasonableness of rates for "upper tiers" of cable service, including for cable networks for which no separate per channel charge is levied. In the Matter of Implementation of Sections of the Cable Television Consumer Protection and Competition Act of 1992 Rate Regulation, *Report and Order,* 8 FCC Rcd 5631, at Appendix A, 1993 FCC LEXIS 2417 (1993). This FCC regulation is due to end at the end of March 1999, pursuant to new provisions contained in the 1996 Act. 47 U.S.C. §543(c)(4). Cable systems facing "effective competition" are not rate regulated in the same fashion.

[24] Esbin, at § VI.

[25] *Id.*

[26] *See* 47 U.S.C. § 706.

Second, if the FCC were to order "open access" to cable broadband networks, it would be favoring that broadband technology over others (for example, wireless broadband technologies). Such regulatory favoritism would discourage investment in broadband networks by other telecommunications players using alternative technologies when there is in fact no legal, technical or financial barrier to such investment that would make cable unbundling good public policy.

Mandating open access to the cable broadband network also would violate the general policy of technological neutrality endorsed by the 1996 Act and implemented by the FCC.[27] Requiring open access to the broadband cable network would essentially promote the use of that technology for Internet access services and discourage the use and development of other technologies, such as wireless, satellite, and DSL services. On the other hand, imposing such requirements only on cable technology would discriminate against that technology unless similar open access requirements were imposed on all other "last mile" solutions.

## V. The FCC Has Found that There is No Monopoly Bottleneck of Broadband Facilities

In a recent report to Congress in February 1999 on the deployment of advanced telecommunications capability,[28] the FCC found that broadband service deployment is occurring in a "reasonable and timely" manner.[29] In making this determination, the FCC considered trends in investment in broadband facilities, as well as the actual deployment of facilities that serve the "last mile" to the consumer market.[30]

In terms of investment, the FCC found that "many companies in virtually all segments of the communications industry have made tens of billions of dollars of investment in broadband facilities."[31] Long distance companies such as AT&T, MCI, Qwest, Level 3, UUNet Technologies, IXC, and Sprint have invested billions of dollars in upgrading and building broadband networks. Since 1993, over $20 billion has been invested in the space industry, of which much has been dedicated to the broadband satellite telecommunications sector. Satellite companies such as Teledesic, EchoStar Satellite Corp., and Loral Aerospace Holdings are among the many satellite companies poised to deploy broadband satellite telecommunications systems. Utility companies also are becoming players in the broadband market. Actual and planned

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[27] *See, e.g.*, 47 U.S.C. § 254 (multiple provisions mandating equitable and nondiscriminatory or competitively neutral rules regarding universal support mechanisms and contributions); 47 U.S.C. § 253(b) & (c) (requiring state and local requirements for telecommunications providers to be 'competitively neutral' and nondiscriminatory).

[28] Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, Report, FCC 99-5 (released Feb. 2, 1999)("Advanced Services Report").

[29] *Id.* at ¶ 7.

[30] *Id.* at ¶ 34.

[31] *Id.* at ¶ 35.

utility-affiliated ventures in the Boston, New York, Philadelphia, Washington, and San Francisco areas have an estimated capital budget of $850 million for 1998 and 1999. Competitive LECs have raised between $15 and $20 billion to invest largely in broadband. Various incumbent LECs, including GTE, SBC, Bell Atlantic, and BellSouth, also are investing millions of dollars in broadband technologies.[32] The FCC determined that these significant amounts of investment across numerous industry segments indicate deployment of broadband facilities in a reasonable and timely fashion.[33]

Not only will these industries be investing in broadband facilities (both backbone and "last mile"), but many also have already deployed broadband "last mile" connections or plan to do so in the near future. Utility-based offerings that provide high-speed Internet access on the utility's fiber inside existing conduits are estimated to already have passed 122,000 homes with "advanced fiber." Competitive LECs, such as Covad, NetConnections, e.spire, and Network Plus, currently provide broadband services to residential consumers, mainly in the "small office, home office" submarket. In a significant number of cities, including the San Francisco Bay Area, wireless cable companies are using spectrum to offer wireless broadband services to residential consumers. It has been estimated that several million residential consumers may now obtain access from such companies. Incumbent LECs are also substantial players in providing broadband "last mile" services, with one estimate stating that incumbent LECs already provide broadband to approximately 25,000 residential consumers. Satellite-based providers, such as Loral's CyberStar unit, Hughes' Spaceway, Lockheed Martin's Astrolink, SkyBridge, and Teledesic, also plan to enter the residential broadband market. Finally, various wireless companies using cellular spectrum, broadcasters' digital spectrum, and other high bandwidth spectrum constitute future competitors.[34]

After noting this very promising picture of investment and deployment in advanced information infrastructure, the FCC specifically considered and rejected ordering open access for cable systems in its proceeding on the deployment of advanced services. The FCC based this decision on the public record, which suggested that "multiple methods of increasing bandwidth are or soon will be made available to a broad range of customers."[35] The FCC did state, however, that it would continue to monitor broadband deployment closely.[36]

Finally, just one month ago, the FCC declined to impose equal access obligations on AT&T-TCI as a condition of its merger. Relying on its findings in the Advanced Services Report, the FCC determined that "multiple methods of providing high-speed Internet access appear to be emerging."[37]

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[32] *Id.* at ¶¶ 38-41.

[33] *Id.* at ¶ 44.

[34] *Id.* at ¶¶ 55-58, 60.

[35] *Id.* at ¶ 101.

[36] *Id.*

[37] Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from

## VI. Ordering Open Access Is Inconsistent with Congress' Desire for the Internet to be as Free from Regulation as Possible

The Internet has long been characterized as a "government free" zone, prospering from the absence of burdensome and costly regulation. Congress recognized this significant aspect about the success of the Internet when it stated that "[t]he Internet and other interactive computer services have flourished, to the benefit of all Americans, with a minimum of government regulation."[38] Pursuant to this finding, Congress then adopted as the policy of the United States "to promote the continued development of the Internet and other interactive computer services and other interactive media . . . [and] to preserve the vibrant and competitive free market that presently exists for the Internet and other interactive computer services, *unfettered by Federal or State regulation*."[39]

Requiring open access for cable Internet access would directly conflict with Congress' clearly stated national policy to keep the Internet as free from regulation as possible. The Federal government has already determined that the competitive free market will adequately regulate Internet access services. It is my view that any additional actions would constitute unnecessary and even harmful regulation to consumers in direct contravention of Federal policies.

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Tele-Communications, Inc., Transferor to AT&T Corp., Transferee, Memorandum Opinion and Order, FCC 99-24, at ¶ 96 (released Feb. 18, 1999).

[38] 47 U.S.C. § 230(a)(4).

[39] 47 U.S.C. § 230(b) (emphasis added).

Thursday, October 7, 1999

# COUNTY EXECUTIVES OF AMERICA OPPOSE GOVERNMENT REGULATION OF BROADBAND INTERNET SERVICES

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**WASHINGTON, DC** -- The Board of Directors of the County Executives of America today adopted a resolution opposing government regulation of broadband Internet services:

> *"Access to the Internet is an essential economic development tool. Broadband Internet access, in particular, is becoming an important tool for citizens to access government services, information resources and consumer choices. Substantial investments are being made by a multitude of competitors to develop and offer better and faster broadband services to consumers. Broadband technologies include a number of different delivery choices for consumers: wireline, cable television, fiber, terrestrial, satellite, wireless, digital broadcasts and other future technologies. Broadband services are at an early stage of development and deployment, and government should not slow the proliferation of these services by encumbering broadband providers with restrictive and burdensome regulations. Such encumbrances could deter future investments in broadband services. The County Executives of America favor a competitive environment to promote the deployment of broadband technologies that will give consumers more choices and flexibility to select a technology that fits their daily needs."*

The County Executives of America is the leading association dedicated solely to chief elected county officials, consisting of nearly 700 chief elected executives of a county or consolidated city/county government. The group represents more than 48 percent of the nation's population and includes the largest and most influential county governments in the nation.

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For additional information from the County Executives of America,
contact Executive Director Michael Griffin, 202/289-4805.

December 18, 1998

Chairman William Kennard
Federal Communications Commission
1919 M. Street, N.W.
Washington, D.C. 20554

Dear Chairman Kennard:

We are members of the Financial Community who advise investors about telecommunications companies and who help these companies raise capital. We follow the Commission proceedings with great interest.

We are writing you today to provide our thoughts on the recent proposals by various businesses and entities that the Commission force cable operators to unbundle their networks so as to permit third parties to offer cable-based data services. We believe adoption of these proposals would significantly slow down the deployment of advanced telecommunications services and would retard the substantial progress the Commission has made toward the deregulatory, competitive telecommunications market envisioned by the 1996 Telecommunications Reform Act.

We urge the Commission, in evaluating these proposals, to consider the following:

1. **The market for Internet access and data transmission services is a highly vibrant, competitive and innovative market.**

   Over the 64 years of the Commission's existence, it has had to deal with a number of issues raised by markets in which there was only one provider. Internet access is a very different market. It is fiercely competitive, with consumers having dozens of choices and several access opportunities in each market. The extraordinary explosion of innovations and new companies over the last several years provides compelling evidence that this is not a market that requires new government regulation.

   Some now argue that broadband access is a different market and that the Commission should act now to assure there are many providers. This argument is contrary to marketplace reality. As financial analysts, we would never advise a client about a proposed investment in the broadband market without a thorough evaluation of trends in the narrowband market. As the record in the Commission's proceedings clearly

shows, narrowband service is a viable, and in many cases attractive, substitute for broadband.

Further, the Commission does not have to act now to assure that there will be many providers of broadband access; the market is already doing so. Over the last year, investors in capital markets have had numerous opportunities to invest in a wide range of companies pursuing two-way broadband business strategies. These businesses include: phone companies offering ADSL and ADSL-Lite; MMDS and other fixed wireless companies; utility companies; and satellite companies offering such products as Direct PC. There are at least five networks with national footprints offering the opportunity for competition as great as that offered by the wireless phone industry, where the Commission has wisely taken a deregulatory approach.

The investment in these facilities and companies are already in the tens of billions. With that kind of investment, the market is clearly signaling that it believes many competitors have a realistic chance of offering high-speed, broadband Internet access. The presence of these facilities, the plans for many more, and the continuing innovations in this marketplace should give the Commission comfort that such marketplace is, and will continue to be, highly competitive.

2. **Serious consideration of an unbundling proposal will dampen the willingness of the market to finance deployment of upgraded cable facilities, other broadband facilities and related equipment.**

It cannot be stated strongly enough that even a hint of regulating the cable network as a common carrier would severely diminish the willingness of investors to finance system upgrades and new facilities.

As soon as such a threat is seen by the market as a realistic possibility, the uncertainty factor would immediately stall further upgrades and delay rollouts, just as uncertainty about the ultimate levels of federally mandated LEC resale rates delayed several cable operators' push to deploy lifeline telephony services. The ultimate financial implications of such a rule would not be known until the Commission worked through all the time-consuming details, such as interconnection rates, co-location terms, and minimum set-aside for third parties, among others. Even then, investors would still need to wait until the court challenges were completed before they could be certain of the terms and conditions of their investment. Not only would this uncertainty diminish the ability of corporate entities to plan new buildouts, but it would effectively kill the public equity market for financing.

> This would not just effect the financing of the cable plant; it would also create, in the eyes of the financial market, a dangerous precedent in which anyone who builds a superior network would risk having that network subsequently subject to common carrier regulation. At a minimum, this would significantly raise the cost of capital for new competitors. More likely, it would be the death knell for any number of other proposed high-speed broadband communications systems.
>
> The enthusiasm of those who would speed the deployment of broadband networks by subsidizing the cost of the customer equipment would also be dampened. As the cost of customer equipment is one of the major deterrents to rapid deployment, this kind of arrangement is critical to building early customer acceptance, and Commission action that would undercut such transactions will eliminate this kind of support.

We are excited about the economic and social benefits that new technologies can create for America. We believe that the Federal Communications Commission has appropriately articulated speeding the deployment of broadband networks as one of its most important goals, but that goal will never be reached and these benefits will never be realized if the Commission acts in a way that undermines investor confidence to provide capital for these new networks.

Sincerely yours,

Laura Martin

Laura A. Martin
Credit Suisse First Boston
Corporation

Dennis H Leibowitz
Donaldson, Lufkin & Jenrette
Securities

Jessica Reif Cohen
Merrill Lynch, Pierce,
Fenner & Smith Incorporated

Thomas W. Eagan
PaineWebber Incorporated

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Sincerely yours,

| | | |
|---|---|---|
| Laura A. Martin<br>Credit Suisse First Boston<br>Corporation | Dennis H. Leibowitz<br>Donaldson, Lufkin & Jenrette<br>Securities | Jessica Reif Cohen<br>Merrill Lynch, Pierce,<br>Fenner & Smith Incorporated |

Thomas W. Eagan
PaineWebber Incorporated

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Laura A. Martin
Credit Suisse First Boston
Corporation

Dennis H Leibowitz
Donaldson, Lufkin & Jenrette
Securities

Jessica Reif Cohen

Jessica Reif Cohen
Merrill Lynch, Pierce,
Fenner & Smith Incorporated

Thomas W. Eagan
PaineWebber Incorporated

cc: Commissioner Harold Furchtgott-Roth
Commissioner Susan Ness
Commissioner Michael Powell
Commissioner Gloria Tristani

FOR IMMEDIATE RELEASE
December 9. 1998

Contact: Chris Cimko
(202) 371-0200

## HIGH-TECH LEADERS TO FCC: DON'T ADOPT ANY NEW BROADBAND REGULATIONS

**Silicon Valley, California** – December 9, 1998 -- A collection of high-tech companies including hardware and software companies; start-up broadband companies; and venture capitalists sent a letter today to the Federal Communications Commission (FCC) urging it not to adopt any new broadband regulations. This collective effort by some of the largest and most established high-tech leaders was initiated to reinforce to the FCC, which is currently evaluating several different actions, that their decision will impact the speed and ubiquity of the deployment of broadband.

The two page letter states, "Government intervention is particularly misplaced in the case of new broadband networks deployed by entities that lack the market position of the traditional telephone companies."

The signatories stress that all businesses would benefit from the deployment of broadband and that there would be numerous social advances in education, heath care and other public services.

In light of the FCC's proceedings, these companies have offered the Commission two observations. First, although the marketplace is building multiple, competitive broadband markets, these companies believe the marketplace needs to move faster. In the letter, industry leaders state, "...we are just beginning to see the fruits of that effort." The letter continues by saying that, "The emergence of these broadband networks, and the plans for more, should give the Commission comfort that marketplace forces will bring the public the benefits of vibrant competition envisioned by the authors of the Telecommunications Act of 1996."

Second, these high-tech leaders make the point that the government should avoid actions that will dampen the willingness of financial markets to finance the construction of broadband facilities. They believe, "... that new and unnecessary regulations will diminish the willingness of capital markets to finance the construction of new broadband networks."

Overall, these leaders share the Commission's view that the public interest will be best served by the deployment of multiple broadband networks as widely and as quickly as possible. However, the goal will only be realized if the Commission maintains a "hands off" approach until markets can determine how the emerging broadband networks will be built and utilized.

A copy of the letter is attached.

###

December 9, 1998

Honorable William E. Kennard
Chairman
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Ex Parte Presentation
CC Docket No. 98-146

Dear Mr. Chairman:

We are writing to you regarding the Commission's important effort to encourage the deployment of broadband networks.

While we are involved in many different types of businesses, we all share a strong interest in making sure high speed broadband networks are built out as quickly and widely as possible. All our businesses will benefit from the deployment of these networks. Just as important, such deployment would catalyze numerous social benefits in education, health care and other public services.

We know the Commission is currently evaluating several different actions that will affect the speed and ubiquity of the deployment of broadband networks. In light of those proceedings we would like to offer two observations.

## 1. The Marketplace is Building Multiple Competitive Broadband Networks, but Needs to Move Faster.

Over the last several years a broad array of providers has invested billions of dollars to create new broadband networks. We are just beginning to see the fruits of that effort, as incumbent and competitive telephone companies, long distance carriers, cable companies, wireless providers, satellite companies, and utilities are now beginning to offer broadband services.

The Commission can rightly take pride in its limited but important role in these developments. For example, it was Commission action that led directly to the creation of new billion dollar companies such as WinStar and Teligent. Similarly, the Commission recently took action to enable wireless cable companies to provide high-speed data transmission.

Significantly, the government action in these instances was limited to making spectrum available to these parties. The Commission then wisely stepped back and let the companies figure out the best way to offer services to the public.

This hands-off approach is right and is beginning to work, but we need to move faster. The emergence of these broadband networks, and the plans for more, should give the Commission comfort that marketplace forces will bring the public the benefits of vibrant competition envisioned by the authors of the Telecommunications Act of 1996. The Commission should ensure that the new multiple broadband networks are not shackled by burdensome new regulations.

## 2. The Government Should Avoid Actions That Will Dampen the Willingness of Financial Markets to Finance the Construction of Broadband Facilities.

It is a simple but undeniable reality that new and unnecessary regulations will diminish the willingness of capital markets to finance the construction of new broadband networks.

This is true for a number of reasons. As a threshold matter, such investments are very risky and lack any guaranteed return. Government regulation would actually limit the return on investment, and cause investors to be less willing to risk the billions of dollars necessary to build out the networks. Government intervention is particularly misplaced in the case of new broadband networks deployed by entities that lack the market position of the traditional telephone companies. Not only is broadband investment in its infancy, there is plenty of competition from existing networks and there will be plenty of competition from emerging networks. Further, the uncertainty created by even potential government regulation increases the cost of capital for new networks.

We share the Commission's view that the public interest will be best served by the deployment of multiple broadband networks as widely as possible. But that goal will only be realized if the Commission maintains a "hands off" approach that trusts markets to determine how the emerging broadband networks will be built and utilized.

Sincerely,

| | |
|---|---|
| Leslie L. Vadasz<br>Senior Vice President<br>Intel Corp. | John T. Chambers<br>President and CEO<br>Cisco Systems |
| Dr. Eric Schmidt<br>Chairman and CEO<br>Novell, Inc. | Eckhard Pfeiffer<br>President and CEO<br>Compaq Computer Corporation |

Peter D. Fenner
President and CEO
COM21, Inc.

C. Richard Kramlich
Partner
New Enterprise Associates

Roger McNamee
Partner
Integral Capital Partners

Gary Griffiths
CEO
SegaSoft Networks, Inc.

Christopher G. Caine
Vice President, Governmental Programs
IBM Corporation

John Doerr
Partner
Kleiner Perkins Caufield & Byers

Jim Breyer
Partner
Accel Partners

Ric Fulop
President
Arepa Inc.

Kevin Bermeister
President
Brilliant Digital Entertainment

cc: Hon. Susan Ness
Hon. Harold Furchtgott-Roth
Hon. Michael Powell
Hon. Gloria Tristani

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**CITY OF LOS ANGELES**

INTER-DEPARTMENTAL CORRESPONDENCE

Date: June 18, 1999 REF: PPE-342-99

To: The Board of Information Technology Commissioners

From: John D. Hwang, General Manager
Information Technology Agency

Subject: **INFORMATION TECHNOLOGY AGENCY BROADBAND ACCESS REPORT**

Attached you should find the Information Technology Agency (ITA) Broadband Access Report prepared by ITA staff pursuant to City Council Resolution dated January 26, 1999 (C.F. 98-2270-S1). The Broadband Access Report responds to Council's directive to develop a policy and implementation plan for open, nondiscriminatory access to cable architecture by Internet access providers.

Please contact me or Jesse Juarros at (213) 485-2866 if you have any questions on this matter.

JJ

Attachment

u:ITABroadbandAccessReport.wpd

*City of Los Angeles*
*Information Technology Agency*

# BROADBAND ACCESS REPORT

## Recommendations on a Policy and Implementation Plan for Open, Nondiscriminatory Access to Cable Architecture by Internet Access Providers

*June 1999*

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## EXECUTIVE SUMMARY

On January 26, 1999, City Council adopted a resolution instructing the Information Technology Agency (Agency) "to develop a policy and implementation plan for open, nondiscriminatory access to cable architecture by Internet access providers, as applied to all cable franchises in the City," and to report back to Council in 90 days. The Agency was granted an additional 60 days to complete the study.

Open access emerged as a regulatory possibility in response to the successful deployment of high-speed cable modem services and the merger of TCI and AT&T. Internet Service Providers and telephone companies asked the Federal Communications Commission (FCC), in the course of its review of the merger, to consider the threat these new cable services posed to competition on the Internet.

The petitioners sought a variety of protections from the FCC, which protections both individually and collectively have become known as "open access." They asked the FCC to order cable companies to (1) unbundle content services from Internet access service, (2) prohibit exclusivity, (3) order cable companies to open cable modem platforms, and (4) order cable companies to grant access to channel capacity under the leased access provisions of the 1984 Cable Act (as amended by the 1992 Cable Act).

For purposes of this report, these requests serve as the definition of "open access." The relevant market under review is the broadband Internet access market. Broadband is defined as any system having the ability to transmit data upstream and downstream in excess of 200 kilobits per second (Kbps).

### Recommendations

The Agency makes the following recommendations to City Council on the provision of cable modem services by cable operators in the City of Los Angeles, which are based on the findings of this report:

a) At the present time, the City should not order cable companies to unbundle content from access in the provision of cable modem services;
b) At the present time, the City should not order cable companies to open their cable modem platforms to unaffiliated Internet Service Providers;
c) The City should continue to monitor the market for broadband access services in the City over the next three years as the Information Technology Agency enters into renewal negotiations with cable operators in order to gauge the necessity of imposing an open access provision in transfers or cable television franchises;
d) The City should require cable companies to submit a cable modem deployment plan and adopt a rapid cable modem deployment schedule in all franchises held by the cable company in the City of Los Angeles;

e) The City should require cable companies to permit unrestricted access to all content on the Internet in addition to allowing subscribers a single "click through" directly to any unaffiliated Internet Service Provider;
f) The City should require cable companies to provide universal access to any cable modem service in a franchise area in which cable modem service is offered;
g) The City should ensure that the Consolidated Consumer Service Standards apply to the provision of cable modem services;
h) The City should work cooperatively with cable operators to develop a set of technical standards applicable to the provision of cable modem services;
i) The City should craft a market-based reopener provision that will be included in all transfer consent ordinances and franchise agreements and that permits the City to order open access if any Los Angeles cable operator exercises control of more than two-thirds of the market for broadband Internet access in a geographic area defined by any cable system operated by that franchisee in the City of Los Angeles;
j) The City should require cable companies to pay franchise fees on all revenues generated by cable modem services.

## Methodology

The Agency developed a method for assessing the need for an open access policy. The method consisted of three phases: (1) fact-finding, (2) analysis and (3) report and comment.

A request for information (RFI) was sent to interested parties, outlining three general areas of concern: (1) the need for regulatory intervention, (2) the effect of regulatory intervention on infrastructure investment and (3) the technical feasibility of open access. The Agency's findings in this report are organized around these three concerns.

## Findings

### a) The Need for Regulatory Intervention

The Agency has determined that the need for regulatory intervention should take into account the market for broadband Internet access services and the possibility that existing cable modem service agreements envision blocking access to Internet web sites and to content on Internet web sites.

The Agency agrees with the findings of the FCC regarding the likelihood of competition in the marketplace for residential broadband Internet access services. In the City of Los Angeles, cable, telephone, wireless and satellite broadband service providers are positioning themselves to serve this market. The lure of the business sector may draw some of these service providers away from the residential market, leaving cable with significant market power over that sector. At present, however, it appears that competition in the residential market will develop.

### b) The Effect of Intervention on Infrastructure Investment

Warnings about the effect of the threat of intervention on investment have not materialized. Although short-term fluctuations in stock prices may be linked to this issue, the demand for broadband access services is growing at such a rapid rate that it seems improbable that long-term financial support for cable broadband would diminish with or without open access. Nevertheless, the Agency does not rule out the possibility that, when wireless and satellite technologies are more established and proven, open access might redirect the flow of investment toward these less burdened technologies.

### c) The Technical Feasibility of Open Access

Service unbundling is feasible but not warranted. Cable modem services already permit single "click through" to unaffiliated content providers. and there is no reason to require cable operators to absorb any additional charges required to access those providers.

Proprietary cable modem platforms are currently capable of connecting to multiple ISPs. However, existing standardized cable modem platforms do not have that functionality and an order imposing open access will require that current standards be revised. This revision will take time and could delay deployment of cable modems.

Leased access as an alternative method of open access was not popular with many entities participating in the Los Angeles open access study. Even if it were, leased access as a method open access works only if the service uses a telephone return path and is a highly inefficient use of cable system spectrum capacity.

## Regulatory Proposals: Three Alternatives

The report analyzes three alternatives for open access: (1) Wait and See, (2) Mandate Open Access, and (3) Condition the Provision of Cable Modem Services.

"Wait and see" is an approach adopted by the FCC. It recognizes the likelihood that a competitive market in broadband Internet access services will develop. Its estimation of the residential broadband Internet access market may be optimistic. In Los Angeles, some providers are focusing solely on the business sector.

Mandating open access recognizes the importance of diversity of information available over the Internet. It also assumes that cable companies will act to control the Internet because of a fear that the Internet will replace cable television as the primary video distribution medium. However, the problems that open access addresses should be better resolved by less costly and intrusive measures than open access and by a competitive marketplace. Given the likelihood of a competitive market emerging, open access does not presently appear to be necessary and/or prudent at this early stage.

Alternative #3 appears to the Agency to be a prudent and advisable course of action for the City Council. This alternative recommends that the City allow the market for broadband access services to develop and to effect provisions that are intended to address existing problems in the provision of cable modem services. The problems Alternative #3 addresses include delay in the deployment of cable modem services, universal access, access to content on the Internet and other conditions as described in the recommendations listed above.

A number of other options were also considered. One such option was to impose a requirement that cable companies open their platforms to unaffiliated Internet Service Providers until such time that it is clear that a competitive market exists. Under this option, the requirement for open access would be removed only when a competitive market develops. This option is not addressed in the report because it was not requested in any comments filed with the Agency. In addition, the option is problematic in that it could discourage investment in competitive platforms and artificially could limit competitive alternatives necessary to revoke the requirement.

## Conclusion

The City Council should adopt the recommendations as described above and detailed in Alternative #3 for the reasons stated and consistent with the analysis that follows. Alternative #3 does not entail requiring open access unless and until specified legal or market conditions are met.

## INTRODUCTION

On January 26, 1999, City Council adopted a resolution that instructed the Information Technology Agency (Agency) "to develop a policy and implementation plan for open, nondiscriminatory access to cable architecture by Internet access providers, as applied to all cable franchises in the City," and to report back to Council in 90 days.[1] This study is submitted to City Council in satisfaction of that resolution.

The resolution was adopted in conjunction with a transfer consent ordinance approving transfer of control of the cable television franchise held by TCI of East San Fernando Valley, L.P. from Tele-Communications, Inc. (TCI) to AT&T Corporation (AT&T).[2] On December 17, 1998, the City of Los Angeles, in the course of its review of the TCI-AT&T merger, held a public hearing in the TCI franchise area to gather public comment on issues pertinent the merger. At that hearing, the Board of Information Technology Commissioners received public comment on the need to impose an open access condition on the transfer.

At the hearing, supporters of open access expressed concern that cable companies might control the market for broadband services and that subscribers will be subject to the same monopolistic rates and practices that they experience with traditional cable television services. Opponents of open access argued that there were technical problems with open access and that open access was contrary to the efforts of the federal government to keep the Internet free of regulation. Cable operators, also opposing the condition, argued that open access would introduce delays in the deployment of the new services.

Open access emerged as a regulatory possibility in response to the successful deployment of high-speed cable modem services and the merger of TCI and AT&T. Internet Service Providers and telephone companies asked the Federal Communications Commission (FCC), in the course of its review of the merger, to consider the threat these new cable services posed to competition on the Internet.

The petitioners sought a variety of protections from the FCC, which protections both individually and collectively have become known as "open access." They asked the FCC to place the following conditions regarding the provision of cable modem services on the transfer of TCI's operating licenses to AT&T:

a) To unbundle content from access, thereby allowing subscribers to purchase Internet access from the cable operator and a content service from a provider not affiliated with the cable company.
b) To permit multiple ISPs to provide Internet services over the same cable system by prohibiting exclusive service agreements between ISPs and cable operators.
c) To permit multiple ISPs to interconnect to a cable operator's cable modem platform.

---

[1] See Council File Index No. 98-2270-S1.

[2] Council Ordinance No. 172459. (Adopted 2-2-99.)

d) To subject the provision of cable modem services to the requirements of Section 251(a,b) of the Telecommunications Act of 1996.
e) To provide capacity to unaffiliated ISPs under the leased access provisions of the Cable Act.[3]

The FCC, in its order approving the merger, declined not only to grant the petitioners' requests for these conditions, but also to conduct any additional hearings on the issue.[4] The FCC reasoned that the merger was "unlikely to adversely affect the public interest in a competitive market."[5] Restating its conclusions in the FCC Advanced Services Report (see below), the FCC concluded that the market for broadband Internet access services was still in its early formative period, that multiple methods of high-speed Internet access were emerging and that regulatory intervention was not warranted at this time. The FCC also restated its commitment to monitor broadband deployment closely.[6]

## JURISDICTION

The Agency is not authorized to issue a legal opinion on the question of the City's jurisdiction to order open access. The Agency has requested the advice of the City Attorney on this matter and the City Attorney is investigating the issue.

## METHODOLOGY

The Agency developed a method for assessing the need for an open access policy. The method consisted of three phases: (1) fact-finding, (2) analysis and (3) report and comment.

During Phase 1, ITA contacted over 100 potentially affected parties including cable companies, cable modem service providers and equipment vendors, telephone companies, ISPs, telecommunications providers, consumer groups and government officials to determine their level of interest in the issue.

A request for information (RFI) was sent to interested parties, outlining three general areas of concern: (1) the need for regulatory intervention, (2) the effect of regulatory intervention on infrastructure investment and (3) the technical feasibility of open access. In order to allow sufficient time for preparation, parties were granted two extensions totaling eight weeks to the original deadline for filing their responses to the RFI. In addition, parties were granted an additional two-week extension after the final deadline in order to file reply comments.

Also during Phase 1, ITA representatives traveled to Denver, Colorado, Washington, D.C. and Redwood City, California.

---

[3] Application for Consent to Transfer Control of Licenses and Section 214 Authorizations from Tele-Communications, Inc., Transferor, to AT&T Corp., Transferee, FCC 99-24, CS Docket No. 98-178 (Adopted February 17, 1999, Released: February 28, 1999) ["FCC Merger Report"], para. 86.
[4] Id., para. 96.
[5] Id., para. 94.
[6] Id., para. 96.

In Denver, ITA met with CableLabs. CableLabs was created as a research and development venture tasked with developing uniform standards for cable modems that enable interoperability and the widespread availability of modems in the consumer electronics market. Interoperability allows buyers of cable modems to connect those same modems to diverse cable modem platforms. The common standard under development is called "DOCSIS" for "Data Over Cable System Interface Specifications." CableLabs now certifies cable modems that comply with DOCSIS version 1.0.

ITA representatives also traveled to Washington, DC and met with representatives of:

1. The Antitrust Division of the Department of Justice
2. The Office of Domestic Policy of the National Telecommunications and Information Administration
3. The Federal Communications Commission
4. The National Cable Television Association
5. The openNET Coalition
6. America Online at its national headquarters in Dulles, Virginia.

Subsequently, ITA representatives met with the @Home Network at its national headquarters in Redwood City, California.

Phase 1 concluded with a series of roundtable discussions held on May 10, 1999 ("roundtables"). Participants in the roundtables were supplied with a list of questions designed to focus the discussion. The first roundtable was a closed session with proponents of open access, most of whom had filed responses to the RFI. The second roundtable was a closed session with opponents of open access. The roundtables concluded with a public meeting of the Board of Information Technology Commissioners at which both proponents and opponents debated the merits and difficulties of open access. Participants in the roundtables included, among others, America Online, GTE, SBC and Media Access Project for the proponents and @Home, MediaOne, AT&T, and Time Warner for the opponents.

Phase 2 consisted mainly of the drafting of this report. Phase 3 will conclude the study with the presentation of the report to the Los Angeles Board of Information Technology Commissioners, the City's Information Technology and General Services Committee and City Council.

## INTERNET BASICS

A basic understanding of the origins and structure of the Internet is an important prerequisite in determining whether or not an open access policy is necessary. This section contains a description of the Internet and its origin.

The Internet is a global bank of computer servers with which home and business computers or computer networks (end-users) can communicate over a complex web of

bridges, routers and telecommunications facilities. End-users retrieve content from these servers, which provide access to information, applications and databases. Entities that provide content, either commercial, government, or educational are called content providers.

End-users and content providers are connected to this complex web by Internet Service Providers (ISPs). ISPs lease telephone lines to attach to the Internet at network access points (NAPs) or at other router banks known as "carrier hotels." NAPs and carrier hotels are commonly constructed at or adjacent to telephone central switching offices called points of presence (POPs). All cites have a POP, but not all cites have a NAP or a carrier hotel. The Los Angeles NAP, also known as MAE-LA (for Metropolitan Area Exchange – Los Angeles) is located in downtown Los Angeles in the One Wilshire building. One Wilshire is also a regional POP. The @Home Network has constructed a "carrier hotel" at One Wilshire. NAPs and carrier hotels are linked by high bandwidth digital transmission lines (the "DS" series) or by fiber optics (the "OC" series).

An Internet "backbone" is an aggregation of router banks and high-speed transmission lines managed by a single entity that ISPs use to link an end-user to a content provider. These backbones have a global reach. Once a content provider is hooked into the Internet, any end-user anywhere on the globe who has access to a telephone line can access to the content provider's web site. A company that constructs and maintains a backbone is called an Internet backbone provider (IBP).[7]

The first backbone was constructed in the 1970s as part of a military project designed to maintain communication links between command and control sites in the event of a nuclear attack. This Internet precursor, then called an "internetwork," could transmit data at 28.8 kilobytes per second (Kbps), two to three times faster than the most common modems of the day. It was called ARPANET after ARPA (Advanced Research Projects Agency), which designed and built the network.

Prior to ARPANET, banks and multinational corporations built closed proprietary networks that reached around the globe and facilitated international business transactions. In the late 1980s, Prodigy, Compuserve, and America Online developed their own closed proprietary systems targeting consumers. These online information services permitted consumers with home computers and dial-up modems to gain access to their bulletin boards, entertainment and banking services. The genius behind ARPANET was its ability to overcome disparate and incompatible protocols of closed networks using TCP/IP, a combination of an Internet Protocol (IP) and a Transmission Control Protocol (TCP). One of the first TCP/IP transmissions on ARPANET, and hence on the Internet, occurred when students at UCLA attempted to send a login instruction to students in northern California.

The National Science Foundation (NSF) recognized the academic research benefits of data communications and commissioned its own internetwork, linking five

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[7] IBPs and ISPs have multiplied rapidly in the 1990s. At last count, in the United States alone, approximately 6000 ISPs use the backbones of about 40 different IBPs.

supercomputer facilities across the country. This new internetwork, called NSFNET, grew exponentially when major universities and research facilities around the globe linked their local area networks to the NSFNET.

The companies that built NSFNET saw commercial potential in data communications and subsequently built additional higher capacity backbones. Around this time, a team of researchers at one of the original supercomputer facilities connected by NSFNET, developed a graphical interface to the Internet called "Mosaic." Mosaic allowed end-users to retrieve pictures and graphics over the Internet and launched what is known today as the World Wide Web. Unhappy that the facility did not want to release Mosaic on a commercial basis, the research team started their own company and developed Netscape, the first commercial Internet browser application and the Internet took its first major steps toward becoming the mass communications media it is today.

A number of technical terms are used in this report, including bandwidth, broadband, narrowband, DOCSIS, ADSL, etc. For the reader's convenience, a glossary of key Internet terms is included at the back of this report.

## FINDINGS

### 1. Is Regulatory Intervention Necessary?

The Internet is not simply a new product line or service. It is a paradigm shift, a revolution in communication that is transforming business and culture on a global scale. What is unique and daunting about the Internet is the speed at which it is expanding and its tremendous potential as an engine of economic growth. The United States, at multiple levels of government, has exercised care not to place unnecessary limitations on the Internet's economic potential and, instead, has taken the position that the growth of the Internet should be encouraged and not restrained by well-intentioned but unnecessary regulation.[8]

The U.S. Congress codified this position in the Telecommunications Act of 1996: "It is the policy of the United States to preserve the vibrant and competitive free market that presently exists for the Internet ... unfettered by Federal or State regulation."[9]

According to FCC Chairman William Kennard, "The Internet is a testament to wise regulatory policy: don't regulate unless there is a clearly demonstrable need to do so....

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[8] "The Internet has flourished in large part due to the unregulated environment in which it has thus far developed ... Federal government policies should support the Internet and Internet access by aggressively promoting free entry into markets and replacing government mandates with market competition." National Conference on State Legislatures Policy Statement on the Internet and Electronic Commerce, July 1998, at www.usic.org/.

[9] 47 U.S.C. § 230(b)(2).

[U]nless there is a demonstrable market failure affecting the general public, we should resist calls to regulate it."[10]

At an April 12, 1999 hearing of the Senate Commerce Committee on broadband services chaired by recent Senator John McCain (R-Arizona), Senator John Kerry (D-Massachusetts) said: "[W]hen the marketplace is working, regulations can be extremely damaging.... It would be very unfortunate if we took action, even with the best of intentions, if it slowed the deployment of advanced services."[11]

Consistent with these views, the City of Los Angeles has approached the task of developing a broadband policy with caution. The City Council instructed the Information Technology Agency to carefully assess the need to alter the existing regulatory framework for Internet Service Providers before recommending any changes to that framework.

The Agency suggests that a determination of the need for regulatory intervention should be guided by two factors. First, an analysis of the market for broadband Internet access services should demonstrate the likelihood of anti-competitive or monopolistic practices resulting from a failure to intervene. Second, an assessment should be made of the impact that failure to intervene would have on the diversity of information sources and services available to the public.

### a. Regulatory Intervention Is Necessary If Anti-Competitive or Monopolistic Practices Are Likely to Occur in the Market for Broadband Internet Access Services

#### 1) Defining the Relevant Market

Parties opposing regulatory intervention in Los Angeles argue that the relevant market is the Internet access market, consisting of both broadband access and narrowband access services. In support of this position, these parties comments list several advantages of narrowband access, including price, equipment, remote access capabilities and alternative uses of a second telephone line to the house to support the proposition that "... at the present time, narrowband is a successfully close demand substitute for broadband service."[12] In addition, they cite Steve Case, CEO of America Online, Inc., who has made the following comments:

a) "the best way to think of [broadband] is an upgrade market,"[13]

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[10] Statement of William E. Kennard, Chairman of the FCC before the United States Senate Committee on the Judiciary, Subcommittee on Antitrust, Business Rights, and Competition, 1999 FCC Lexis 753 (Feb. 25, 1999)(cited in comments of AT&T, p. 2.)

[11] "FCC and NTIA Would Take a Second Look at Broadband Under McCain Bill," Communications Daily, April 14, 1999.

[12] AT&T filing, Exhibit E ("Declaration of Professors Janusz A. Ordover and Robert D. Willig"), p. 5.

[13] Century Communications filing, p. 7, citing "Interactive Services for the Mainstream," reported in the San Jose Mercury News, January 25, 1999 at www.sjmercury.com/.

b) "even five years from now 'seventy-five percent of the market will be narrowband because people want it to be easy and inexpensive as possible,'"[14] and,

c) "broadband will be like first class is to the airlines."[15]

Because, in their opinion, the relevant market is Internet access, these commenters conclude that the current market share of cable modem service providers is about 2%. According to Time Warner, in the "market as it exists today ... AOL has 17 million subscribers and adds the equivalent of Road Runner's entire subscriber base every few weeks."[16]

Parties favoring intervention, in general, chose not to submit arguments defining the relevant market. Instead, their comments highlight the advantages of cable modem service over all other Internet access services, narrowband and broadband. The advantages mentioned include price, speed and reach.[17] These commenters conclude that, on account of these advantages, cable modem service providers will exercise market power to the detriment of consumers unless unaffiliated access providers are permitted to offer high-speed Internet access services over cable systems.

In February, 1999, the Federal Communications Commission released its report on the deployment of advanced telecommunications capability pursuant to Section 706 of the Telecommunications Act of 1996 ("FCC 706 Report").[18] In that report, the FCC defines "broadband" as Internet services offering transmission speeds in excess of 200 kilobytes per second both upstream and downstream in the last mile.[19] Under that definition, the FCC includes cable modem services, ADSL, "ADSL-lite," LMDS, MMDS and satellite services.[20] The FCC 706 Report characterizes the broadband market as "fledgling"[21] and

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[14] Interview with Steve Case, Power Lunch, CNBC (broadcast September 28, 1998, cited in comments of AT&T, p. 10 and comments of Century, p. 7.

[15] Electronic Media, November 9, 1998 cited in comments of AT&T, p. 10.

[16] Reply Comments of Time Warner, May 14, 1999, p. 3.

[17] Comments of Media Access Project, p. 2; Reply Comments of GTE, p. 4.

[18] Inquiry Concerning the Deployment of Advanced Telecommunications Capability ... Pursuant to Section 706 of the Telecommunications Act of 1996, FCC 99-5 (CC Docket No. 98-146) (Adopted Jan. 28, 1999)[hereinafter FCC 706 Report].

[19] Id. at para. 20. ("We have initially chosen 200 Kbps because it is enough to provide the most popular forms of broadband – to change web pages as fast as one can flip through pages of a book and to transmit full motion video.") Under this definition, no services that provide one way downstream speeds in excess of 200 Kbps with a telephone return path qualify as "broadband" services. These excluded services include DirecPC, a satellite based Internet service offered by Hughes Corporation with downstream speeds of 400 Kbps, one-way cable modems, and one-way LMDS and MMDS Internet services. Alternate definitions have been proposed, including one definition that places ISDN or its equivalent and any transmission services lower than 128 Kbps in the narrowband category.

[20] ADSL stands for asymmetric digital subscriber line, a high-speed telephone service for residential customers. ADSL-lite is a version of ADSL that is somewhat slower and less expensive than ADSL because it does not require termination equipment at the home. LMDS is local multipoint distribution system, a short-range wireless service. MMDS is multichannel, multipoint distribution services, a long-range wireless transmission service. Satellite service refers not to DirecPC but to next generation Ka-band satellites capable of two-way high-speed transmission. Only next generation satellites are still in the development phase. All other services have been deployed, some more widely than others.

[21] Id. at para. 16.

"in the early stages of development"[22] and concludes that "[u]nder most scenarios, competition among several facilities-based providers of residential broadband will occur."[23] Despite this optimism, the FCC "will continue to monitor deployment of such capability."[24]

In reviewing the arguments of parties and taking into account the FCC's 706 Report, the Agency concludes that the relevant market in this proceeding is the broadband Internet access market. Broadband access speeds already have transformed the World Wide Web from a frustrating curiosity into a useful and increasingly important vehicle of education, entertainment and commerce. Moreover, as the Internet changes from a data service into a multimedia and video distribution medium, broadband access speeds will become a necessary prerequisite for most Internet users.

### 2) Assessing the Competition: Wireline

Distinctions among technologies warrant a cautious assessment of cable's ability to exercise market control over broadband Internet access services. Among wireline technologies, cable passes approximately 94% of Los Angeles residents.[25] The Los Angeles cable franchises require cable services to be universally available throughout the franchise area.[26] Cable systems that are upgraded to provide high-speed cable modem services will be required to make those services available to all residents. Although telephone lines pass almost 99% of Los Angeles residents, DSL, in its current form, may not be able to reach as many as one third of those residents (see below).

At the Agency's May 10, 1999 roundtables, an SBC representative explained the differences between cable modem service and ADSL services. He argued that existing technical limitations on ADSL services limit its reach to between 50% and 67% of Los Angeles residents. According to SBC, broadband services offered on satellite and wireless cable platforms are expensive and are prone to signal degrading conditions that do not affect wireline services.[27] He concluded that, in the absence of an open access requirement, a significant percentage of Los Angeles residents would not be able to choose among competing broadband providers, but instead would be forced to subscribe to a single cable modem ISP.

At the same May 10 roundtable, GTE concurred with SBC's description of ADSL's limitations and stated that GTE's reach and SBC's reach in the Los Angeles DSL market were roughly equivalent. GTE's reply comments restated this position: "What is in store is the possibility that ADSL service over telephone lines, along with some version of

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[22] Id. at para. 48.

[23] Id. at para. 94.

[24] Id. at para. 98.

[25] As of December 1998, cable systems passed 1.35 million of the 1.44 million dwelling units in the City of Los Angeles.

[26] See City of Los Angeles Cable Television Franchises, Section 4.3.

[27] SBC Communications owned Pacific Bell Digital TV until November 1998. Pacific Bell Digital TV packaged local broadcast and satellite programming and distributed that programming in Los Angeles and Orange Counties. SBC sold the service to Prime One, which continues to operate the service as "Tele TV."

wireless access, may serve as similar (if not fully equivalent) alternatives for many customers. However, ADSL is limited in its geographic scope, so at least a third (and possibly more) of Los Angeles customers will not have ADSL access."[28]

Apart from reach, the different technologies analyzed by the FCC vary in other important ways. ADSL's basic service package, for example, charges customers approximately $50 for a guaranteed minimum of 384 Kbps downstream connection. Cable modem providers are currently charging $40 for connection to a shared media system that provides downstream speeds up to 1.5 Mbps without any guaranteed minimum speed. The fact that one service is a dedicated service and the other service is a shared service may help to level the differences.[29] A recent survey of broadband services in San Francisco conducted by Keynote found @Home speeds dropped below Pacific Bell's DSL speeds during peak personal hours (5 p.m. to 11 p.m.).[30] In Fremont, California, @Home subscribers complained that their access speeds lingered around dial-up narrowband speeds for extended periods of time.[31]

However, @Home responded by claiming that the service degradation in Fremont resulted from a technical problem and was not caused by subscriber load. In addition, representatives of MediaOne Express (now Roadrunner) claim that, although downstream speeds of 1.5 Mbps are not guaranteed, the service rarely drops below 1.2-1.3 Mbps.

The FCC 706 Report lists the cost to install a cable modem at $75-$150 and an ADSL modem at $300.[32] DSL service providers have developed a less expensive alternative called "G.lite" or ADSL-lite. This product does not require installation of a DSL splitter at the home. Therefore, no truck roll is required, which reduces installation costs about $100. The typical ADSL-lite residential speed is 1 Mbps. Maximum downstream speeds reach 1.5 Mbps, approximately one fourth the maximum downstream speed of ADSL. At the time of the FCC 706 Report, ADSL-lite was still in trials and no customer price point had been established.[33]

Opponents listed several DSL brands currently offered in the Los Angeles Metro Area. These brands included Pacific Bell's Fas Trak DSL, an unnamed GTE DSL service, Nextlink, Covad's TeleSpeed business service and TeleSurfer residential service, Northpoint, Concentric, Winstar and Teligent. Covad and Northpoint have both

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[28] Reply Comments of GTE, p. 6. In subsequent discussions with SBC and GTE, the parties admitted that technical solutions to some of these geographic limitations may exist.

[29] Telephone systems utilize a star architecture that runs a single dedicated telephone line (or loop) between a central office and a single customer. Cable systems operate on a tree and branch architecture that requires cable operators to transmit the same channels to multiple subscribers. The cable system is, for this reason, a shared media system. As many as 500-1000 subscribers "share" a single downstream channel set aside for Internet service. As the number of users of the Internet "channel" increases, the speed available to a single user decreases. Unlike cable companies, telephone companies can guarantee a minimum speed because the speed of the service is independent of the number of users.

[30] "The Night-and-Day Contrast of Web Speed", Los Angeles Times, May 24, 1999, at www.latimes.com/HOME/BUSINESS/CUTTING/t000046556.html.

[31] See San Francisco Chronicle, December 1, 1998.

[32] FCC 706 Report at Chart 2. Consumer premises equipment included in both estimates.

[33] FCC 706 Report at Appendix A, para. 5. The Agency is unaware of the local availability of ADSL-lite.

established partnerships with multiple ISPs to offer DSL in Los Angeles. Among those Los Angeles ISPs partnering with Covad, the following companies provide residential service: Flashcom, Verio, Zyan, Internet Connect, SoftAware, linkLINE, Xtrafast.com, CTSNET, MM Internet, Internet Express and Fastpoint Communications. @Work, a service of the At Home Corporation, is listed among Northpoint's ISP partners.[34]

The viability of ADSL as a high-speed Internet access service may be more proven than cable modem service. Phone companies experimented in the late 1980s with several versions of DSL, but chose instead to install T-1 lines to businesses and residents that could afford the expensive option. T-1 lines transmit data at a speed of approximately 1.54 Mbps, roughly equivalent to residential ADSL. Residential ADSL was not deployed in California until spring 1998, shortly after cable modem services appeared in the Los Angeles market. It has been suggested that this delay in deployment resulted from a concern that a less expensive DSL product would cut into T-1 revenues, a concern that apparently was discarded by the threat of a competitive cable modem product.

To counter arguments that ADSL is not a viable alternative to cable modems, opponents cite recent agreements between America Online and SBC and America Online and GTE. These agreements allow AOL to offer a premium upgrade to its narrowband customers for an additional $20 per month.[35] If the SBC-Ameritech and GTE-Bell-Atlantic mergers are approved, America Online will be able to offer its broadband service to most telephone markets in the United States.

There is evidence that speed, price and reach of ADSL and cable modems are converging. According to SBC, the $50 basic service guarantees a minimum of 384 Kbps downstream; if, however, a user lives near a central office, speeds of 1.5 Mbps are routinely available to the user.[36] As part of its nationwide deployment of ADSL, during which all 255 central offices in California will be equipped to offer ADSL, SBC dropped its ADSL service price and Internet access charges 45% and its installation and equipment charges 34%.[37] SBC and GTE representatives have acknowledged that technical solutions to the problem of geographic reach exist. One solution, IDSL, has no geographical limitations; however IDSL is a 128 Kbps service and, therefore, does not qualify as broadband Internet access service. The Agency has no information on the financial viability of other solutions, such as the use of remote DSLAMS.[38]

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[34] Efforts by the ITA to obtain current subscriber counts from these providers were unsuccessful.

[35] "America Online and SBC Communications to Offer High Speed Upgrade to AOL Members," AOL Press Release, Comments of the Los Angeles Area Cable Operators Association (LACOA), Exhibit 3.

[36] Based on discussions with SBC.

[37] "Got Bandwidth? Pacific Bell Answers California's "Need for Speed" with $39 ADSL Service, Major Availability," Pacific Bell Network press release, January 12, 1999, Comments of LACOA, Exhibit 1. In September 1998, when Pacific Bell first announced wide scale deployment of ADSL in California, the company advertised an "ADSL Home Pack" with a start-up cost beginning at $299 and monthly service at $89 ($59 for ADSL service and $30 for Internet access from Pacific Bell Internet).

[38] See Glossary for a definition of DSLAM. It has been suggested that the reach of DSL could be extended by creating DSLAM hubs outside the central office that are connected back to the central office via fiber optic lines. Whether this option is viable or not, the likelihood that there is a technical solution to the problem of reach suggests that DSL is capable of extending its reach at least as far as any cable modem service.

Additional wireline competitors include overbuilders and electric utilities. RCN is a broadband overbuilder applying for certification to operate as an open video system in Los Angeles. RCN bundles high-speed Internet, telephone and video programming. Electric utilities are also exploring their entry into broadband, investigating a number of innovative data transmission technologies such as the use of electromagnetic fields surrounding electrical lines. According to LACOA: "In California, Southern California Edison has applied for authority to provide telecommunications service in Los Angeles."[39] The FCC 706 Report states: "A growing number of public utilities are offering broadband within their utility service territories."[40]

### 3) Assessing the Competition: Wireless

The earliest high-speed alternative to wireline Internet services available to residential consumers was a product developed by Hughes Corporation called DirecPC. Because DirecPC requires a telephone return path, DirecPC does not qualify as a broadband Internet access service. Consumers who purchase a special satellite receiving dish (which is slightly larger than DirecTV's 18" dish) can get downstream speeds up to 400 Kbps for 25 hours per month at $29.99 and 100 hours per month at $49.99.[41]

Local Multipoint Distribution Services (LMDS) and Multichannel Multipoint Distribution Services (MMDS) are fixed wireless services that rely on line-of-sight transmissions to offer video and data services. LMDS utilizes low power microwave transmission facilities to serve a limited geographic area. MMDS utilizes higher power facilities to transmit microwave signals as far as 25-30 miles. As SBC indicated, LMDS and MMDS systems suffer from rain fade and other off-air signal degradations. However, power amplification and digitization reduce these distortions to a level acceptable to most consumers, a level comparable to most wireline video systems. Los Angeles is a good market for these services because of the limited amount of rain and because of the terrain.

LMDS companies currently offer one-way wireless residential services with downstream speeds of 500 Kbps using a telephone return path for upstream transmission. Two LMDS companies cited by opponents as evidence of competition in Los Angeles, Winstar and Teligent, utilize higher spectrum allocations for a two-way service at speeds in excess of 1.5 Mbps both upstream and downstream. Winstar and Teligent currently serve only small- and medium-sized businesses and have not released any information or plans regarding a residential service.

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[39] Comments of LACOA, p. 13, citing PUC Order No. R. 95-04-043/I.95-04-044, Decision 98-12-083, (December 17, 1998).

[40] FCC 706 Report, para. 55.

[41] FCC 706 Report at Appendix A, para. 3. DirecTV, a high-powered Ku-band satellite video provider has forged a deal with AOL in which AOL will provide interactive services on DirecTV's video platform. According to the article, AOL will develop an interactive programming guide, e-mail capability and a home shopping service.

MMDS companies are offering a two-way wireless residential broadband service for $50-$70 per month for speeds up to 1 Mbps downstream and 256 Kbps upstream, however not in Los Angeles. Prime One Tele TV has an MMDS service available throughout Los Angeles and Orange Counties. Tele TV does not currently offer a broadband Internet access service. On May 21, 1999, the company reported to the Los Angeles Board of Information Technology Commissioners that it was investigating its broadband options.

Sprint Corporation has recently purchased two of the largest US MMDS providers, American Telecasting, Inc., and People's Choice TV. Sprint plans to offer a broadband product called "ION" for "Integrated Online Network" over its MMDS systems.[42] Tele TV has not indicated whether or not Sprint has expressed any interest in purchasing the Los Angeles system or making its ION service available on Tele TV.

DirecTV is pioneering a new satellite product called "Spaceway." Spaceway is expected to offer two-way broadband services using Ka-band high-powered satellites by 2003.[43] Hughes has announced that the service "will give consumers access to inexpensive, high-speed computer links, including Internet and video conferencing."[44] However, satellite return will continue to be too expensive for residential consumers as late as 2003.[45] Therefore, despite downlink capabilities of up to 400 Mbps, residential versions of Spaceway will continue to include a telephone return modality for upstream transmissions for the foreseeable future.

Another satellite-based venture involves the global deployment of 288 low earth orbit (LEO) satellites at an estimated cost of $65 billion. Operating under the name Teledesic, and funded by Craig McCaw and Bill Gates, the venture plans to establish a global network of satellites capable of high-speed voice, video and data transmissions. Teledesic has received the approval of the FCC to use LEO orbital slots for the project.[46] Although satellites have been launched for use in a couple of international markets, deployment of satellites over the United States has not yet occurred.[47] The Agency is not aware of speed and pricing characteristics of the service.

### 4) The Forecasts

Two studies by the Pioneer Consulting Group and the Forrester Research forecast the market for broadband access services. The significant variations in these studies limit their usefulness. The Agency has not been able to confirm the reliability of either study.

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[42] See "Sprint Agrees To Acquire American Telecasting, Inc.", May 3, 1999, at http://www.sprint.com/Stemp/press/releases/9904/9904270793.html.

[43] The FCC has approved the use of Ka-band satellites for two-way data transmission. "Application for Authority to Construct, Launch, and Operate a Low Earth Orbit Satellite System in the Domestic and International Fixed Satellite Service", March 14, 1997, File Nos. 22-DSS-P/LA-94, 43-SAT-AMEND-95, 127 SAT-AMEND-95.

[44] Comments of LACOA, Exhibit 26.

[45] See "DBS Data Services Need Satellite Return," in Broadband Week, May 17, 1999, at www.multichannel.com/.

[46] See "FCC Licenses Teledesic's 'Internet-in-the-Sky'", March 14, 1997, at http://www.teledesic.com/newsroom.html

[47] See "Teledesic Overview" at http://www.teledesic.com/overview.html.

The Agency hoped that published forecasts of the market for broadband access services could inform its investigation. LACOA submitted a study of the market conducted by Pioneer Consulting entitled "Global Broadband Access Markets: xDSL, Cable Modems and the Threat from Broadband Satellite, Wireless, and All-Optical Solutions."[48] The Pioneer study concluded that by 2002, the market will be split between cable modems and xDSL, with cable modems garnering approximately 51% market share and xDSL garnering about 37% market share, with wireless alternatives serving the balance of the market. However by 2007, Pioneer forecasts that the market will be more evenly split between cable modems (34%), xDSL (28%) and satellite (29%), with terrestrial wireless making up the difference.[49]

The *Los Angeles Times,* in a March 32, 1999 report on cable mergers, cited a study by Forrester Research. The Forrester study concluded that by 2002, cable modems will occupy 86% of the wireline broadband market, and ADSL will only control 14% of the same market.[50] No data was presented on wireless alternatives.

### 5) Analysis

At the May 10, 1999 roundtables, the Agency posed the question: "Is a consumer service standard for open access needed even if a competitive market for high-speed data services develops within the next few years?" GTE addressed the question in its reply comments: "There is no chance that the market for high-speed access will resemble the textbook case of perfect competition. What is in store is the possibility that ADSL service over telephone lines, along with some version of wireless access may serve as similar (if not fully equivalent) alternatives for many customers."[51]

However, the Agency does not believe that the role of the government in establishing the rules of the marketplace is to ensure perfect competition. The government's concern should be market dysfunction, and cable regulation is a case in point. Must carry, program access, leased access, cross-ownership prohibitions and rate regulation had as a core justification the ability of cable companies to exercise excessive market power in determining the cost and quality of cable service.

The FCC 706 Report does not measure its findings against the desire to perfect competition. Rather, the concern is whether or not competition exists at all and whether or not a monopoly or a duopoly is being established. The FCC 706 Report concludes: "We believe it is premature to conclude that there will not be competition in the consumer market for broadband. The preconditions for monopoly appear absent.... By the standards of traditional residential telecommunications, there are, or likely will soon be, a large number of actual participants and potential entrants in this market."[52] The

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[48] Comments of LACOA, Exhibit 29.

[49] Id. at Exhibit E-4.

[50] "Speed Is the Force Behind Cable Deal," Los Angeles Times, March 23, 1999, p. C1.

[51] Reply Comments of GTE: To the City of Los Angeles Regarding Open Access, p. 6.

[52] FCC 706 Report, para. 48.

FCC takes the position, however, that market aggregation and/or the failure of a subset of broadband technologies may lead to a sustained monopoly or duopoly. Thus they add: "We will fight any attempt to make residential broadband into such a market, because it would not perform well for consumers."[53]

The Agency has not uncovered compelling evidence in the market for broadband that warrants significant deviation from the FCC's position. At the present time, the only two technologies designed to serve residential consumers that are actively being deployed in Los Angeles are cable modems and ADSL. Although there is evidence that suggests the possibility that the speed, price and reach of these technologies may converge and that other technologies will enter the Los Angeles market, the data warrants no more than a cautious optimism. Accordingly, it is important to determine if there is any additional justification for regulatory intervention that heightens concern about existing market uncertainties.

### b. Regulatory Intervention Is Necessary If the Diversity of Information Sources and Services Is Likely To Be Compromised by Business Arrangements

In addition to promoting competition and minimizing unnecessary regulation, the 1984 Cable Act also was designed "to assure that cable communications provide and are encouraged to provide the widest possible diversity of information sources and services to the public."[54] The 1992 Cable Act added that the purpose of the leased access provisions was "to promote competition in the delivery of diverse sources of video programming..."[55]

Consistent with the broad purposes of these Cable Acts, whether or not concern about market power is sufficiently conclusive to justify regulatory intervention, compelling evidence that access to the Internet can be limited may warrant positive action by the City.

#### 1) The Likelihood of Content Restrictions

In granting its approval of the TCI-AT&T merger, the FCC addressed the access issue by quoting a letter dated January 7, 1999 from TCI to Dr. Robert Pepper of the FCC ("Pepper Letter") in which TCI states:

> "Even if an online service provider cannot or does not want to enter into [an agreement providing TCI customers with unimpeded access to that provider, ...customers of [@Home] can still access that provider through their TCP/IP connections.... They do not have to go through @Home or view any @Home

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[53] Id. at para. 52.

[54] Cable Communications Policy Act of 1984, § 601(4). The uncodified version of the 1992 Cable Act contains the following language: " There is a substantial governmental and First Amendment interest in promoting a diversity of views provided through multiple technology media" (§ 2(a)(6)).

[55] Cable Television Competition and Consumer Protection Act of 1992, § 612(a).

> provided content or screens.... This will continue to be the case after the merger."[56]

The fact that a consumer can activate AOL or some other online service program in order to access the Internet over @Home's network should lessen concerns about @Home's control over access to information on the Internet and to the proprietary information of online service providers. The Agency is concerned about the possibility that the @Home service was reconfigured to add this functionality and the Pepper Letter was drafted as a concession to the FCC in the wake of complaints by AOL and others that @Home might act as an Internet gatekeeper or bottleneck.[57] If the Pepper Letter is a concession and the system was altered, then there is no guarantee that the functionality described in the Pepper Letter will not be reversed.

Other sources of concern are the access blocking and exclusivity provisions in @Home's Master Distribution Agreement (MDA).[58] These provisions plainly state that @Home may exercise control over subscribers' access to content on its network and/or that cable companies could limit content available to subscribers over @Home. Under the MDA, TCI (AT&T), Cox and Comcast (the "Cable Parents") are entitled to exercise access blocking and exclusion rights.[59] These Cable Parents may require @Home to block competitors' web sites, up to a specified limit (violation of which alters the compensation scheme), or to block web sites that a Cable Parent determines in good faith to contain "pornographic or other immoral or overly violent subject matter."[60]

In addition to these blocking provisions, the MDA entitles cable operators to instruct @Home to block web sites that distribute a "Video Service." "Video Service" is defined as an Internet Service or content provider that uses streaming video transmissions that exceed 10 minutes.[61] In other words, @Home agrees not to use or allow others to use the Internet to offer a product that competes directly with cable companies' core business -- video programming.

The MDA also contains exclusivity provisions that appear to be designed to protect the Cable Parents in the event @Home violates a blocking obligation or offers a competitive high-speed Internet service in any area served by cable systems owned by the Cable Parents.[62] Conversely, Cable Parents are prohibited from owning or offering high-speed Internet services other than @Home.

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[56] FCC Merger Report, para. 95.

[57] See Comments of LACOA, p. 18 ("AT&T's and TCI's commitment to providing consumers with unimpeded "one-click" access to the online service provider of their choice was a factor in the FCC's decision to approve the AT&T-TCI merger without requiring AT&T-TCI to provide unbundled access to competing ISPs.")

[58] @Home Master Distribution Agreement Term Sheet [hereinafter MDA]. It should be noted that @Home willingly supplied this agreement to the City.

[59] @Home is owned by a consortium that includes Cox, Comcast and TCI (AT&T). Under the MDA, these three cable companies are referred to collectively as "Cable Parents" and are subject to terms and conditions of the MDA.

[60] MDA, §§ 14, 15.

[61] MDA, § 1(a) and § 7(a)(iii).

[62] Id. at § 7.

In fairness to @Home and @Home's Cable Parents, concern that cable subscribers might use @Home to bypass traditional cable television services is understandable. The question is whether or not the definition of video services in the MDA overreaches that concern. Why not, for example, define video services as services equivalent to video programming services and require @Home to block those sites?

@Home's defense to a charge of overreaching is that the purpose of the video streaming limitation is not only to protect cable companies' core business, but also to minimize technical problems associated with bandwidth consuming applications.

The problem with this defense is that @Home and other cable modem service providers set bandwidth limits artificially by using only a single 6 MHz channel for downstream transmission and by placing a high rate-limit on cable modem transmission speeds. In other words, there are technical solutions to the problem of capacity limitations that would not require such a standard. Moreover, given that a primary advantage of broadband services over narrowband services is the ability to stream video of an acceptable quality, a self-imposed 10-minute limitation seems counterproductive.

### 2) Analysis

The question posed by the MDA and the Pepper Letter is whether or not @Home and the Cable Parents' ability to exercise editorial control over the Internet warrant some form of regulatory intervention to protect consumers' interests in accessing Internet content of their choice.

The City of Seattle addressed the problem of information diversity by including the following language in its AT&T-TCI transfer consent ordinance:

> "Subscribers to the high speed Internet access service affiliated with the franchisees will be able to reach any and all information on the Internet and will be able to choose to reach information from other sources and through other Internet service providers and on line access providers without viewing content provided by the affiliated high speed Internet access service provider."[63]

The Seattle solution is attractive because it is a solution targeted directly at the problem of information diversity. It is consistent with @Home and cable companies' arguments that restricting access to the Internet's content is counterproductive. It is also consistent with the Pepper Letter in that the Pepper Letter promises that subscribers of unaffiliated ISPs who click through @Home will have "unimpeded access to that provider."[64] The blocking and streaming provisions of the @Home MDA would appear to be problematic, but @Home has told the Agency that those provisions have never been invoked.

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[63] Seattle Ordinance, Section 1(c)(2) at www.ci.seattle.wa.us/cable/leg/attxfer5.htm.

[64] FCC Merger Report, para. 95.

But neither the Pepper Letter, nor @Home or cable MSOs' verbal assurances that Internet content will not be restricted are sufficient to ensure information diversity on the Internet. Open access, whether in the form of opening the cable modem platform or banning on exclusivity provisions in service agreements, may be a solution to this problem. But it is not the only solution nor is it a necessary solution. The Seattle solution is less costly and less burdensome and should be given careful consideration by the City.

### 2. The Effect of Intervention on Infrastructure Investment

Doubts about the certainty of broadband's success are evident in a statement made by an America Online spokeperson as recently as August 1998: "I think the question is whether or not these high-speed bandwidth services are going to get rolled out. We are not seeing them rolled out very quickly now. They're going very, very slowly. There's a price sensitivity. There is still a technological uncertainty. There are still penetration doubts. As I say, the cost to install is pretty high; pretty difficult."[65]

These uncertainties are reflected in a letter to the FCC from prominent Silicon Valley companies including Intel, Cisco, Novell, Compaq and IBM. The letter states: "It is a simple but undeniable reality that new and unnecessary regulations will diminish the willingness of capital markets to finance the construction of new broadband networks. This is true for a number of reasons. As a threshold matter, such investments are very risky and lack any guaranteed return."[66]

A recent hearing of the Senate Commerce Committee on the question of access to broadband services yielded a similar conclusion. Senator Joseph Wyden (D-Oregon), whose hometown, Portland, Oregon, imposed the first open access condition on a cable operator, told a panel of ISPs that the "cable argument that it might lose investors 'strikes me as logical.'"[67] He added, describing Portland, "We aren't exactly tripping over ourselves ... to implement new regulations."[68]

Four investment firms, including Merrill Lynch, Credit Suisse First Boston, PaineWebber and Donaldson, Lufkin & Jenrette sent a letter to the FCC during its deliberations on the AT&T-TCI merger ("Merrill Lynch Letter"). The letter warns that an unbundling requirement would create enough regulatory uncertainty to "effectively kill the public equity for financing [deployment of broadband facilities]."[69]

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[65] Comments of AT&T, Exhibit E, p. 6.

[66] Comments of AT&T, Exhibit G, p. 2.

[67] Communications Daily, April 14, 1999, "FCC and NTIA Would Take a Second Look at Broadband under McCain Bill."

[68] Id.

[69] Comments of AT&T, Exhibit F, p. 2.

Time Warner, MediaOne, AT&T, Century and Buenavision personalize the threat by asserting that cable system upgrades in Los Angeles will be delayed indefinitely until the disputes associated with regulatory intervention by the City are resolved.[70]

As compelling and logical as these assertions appear to be, there are problems with them that warrant discussion.

The first problem is that regulation is asserted to undermine investment regardless of its effect on the provision of services or any uncertainties the regulation introduces into the market. Only the Merrill Lynch Letter addresses a specific regulatory proposal, unbundling, in its analysis of regulatory effects on investment.

Another problem is the assertion that "even the threat" of regulation would undermine investment in broadband.[71] These assertions were timed to coincide with the FCC's review of the TCI-AT&T merger and America Online's unbundling petition. Subsequently, Los Angeles, Seattle, Portland, Texas, Missouri, New Mexico and the United States Congress have "threatened" just such regulation. Portland went further than threatening regulation by conditioning its approval of the AT&T-TCI merger on a provision requiring nondiscriminatory access to cable modem platforms. Despite these threats, not only have record-setting mergers continued, the price per subscriber that acquiring companies are willing to pay for cable companies has increased significantly.

One reason for the absence of any correlation between the threat of regulation and investment may be the opportunity to offer local telephone service. It is possible that the open access debate is not a significant threat when compared to the anticipated revenue streams of a cable-based telephone service, despite the fact that cable phone systems would be subject to Title II regulation.[72]

Even if the threat of regulation is not discouraging investment in broadband, regulation itself may be a different story. If, for example, upstream bandwidth required for cable telephony was placed at risk because multiple ISPs demanded access to the system under an interconnection entitlement, financial support for cable telephony may shift to other technologies not subject to the same risk.[73] The Merrill Lynch Letter describes the other consequences a network unbundling requirement: "The ultimate financial implications of such a rule would not be known until the Commission worked through all the time consuming details, such as interconnection rates, co-location terms, and minimum set aside for third parties, among others. Even then, investors would still need to wait until the court challenges were completed before they could be certain of the terms and conditions of their investment."[74]

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[70] Comments of AT&T, p. 24; Comments of Buenavision, p. 6; Comments of Century, p. 22; Comments of MediaOne, p. 18; Comments of Time Warner, p. 3.

[71] See "Cable Modems, Access and Investment Incentives," Bruce M. Owens and Gregory L. Ross, December 1998, p.8; Comments of LACOA, p. 24.

[72] Telecommunications Act of 1996, §§ 251(a,b)

[73] Comments of AT&T, p. 29, fn. 65.

[74] Comments of AT&T, Exhibit F, p. 2.

Parties on both sides of the debate point to papers written by economists supporting their respective positions. AOL submitted a brief paper written by Jeffrey Mackie-Mason, economist at the University of Michigan.[75] Mackie-Mason summarizes the results of case studies in other markets to contend that offering consumers a variety of ISPs from which to choose will increase demand for broadband Internet access services and will benefit cable operators.

However, the Mackie-Mason analysis relies on case studies about goods, not services. Thus, it cannot address the possibility that the introduction of variety might degrade pre-existing services and discourage adoption.[76] More importantly, the variety he describes does not come about by increased regulation in a given market, wherein battles are likely to occur over the implementation of that regulation. AT&T points to the resale obligations of the 1996 Telecom Act as its own case in point, describing resale of local telephony as a "costly and dismal experience."[77]

Joseph Farrell, an economist at the University of California at Berkeley, contends that unbundling by definition decreases profitability and that forced unbundling reduces private incentives to roll out new services.[78] He believes this is especially true for innovative services and has argued before the FCC to relax application of ILEC unbundling rules as applied to advanced services. Owen and Rosston write: "[I]t makes no sense to assert that barring cable operators from offering integrated vertical services would have no effect on their investment incentives."[79]

GTE reintroduces the work of Joseph Hausman, an economist at M.I.T. who filed at the FCC on behalf of AOL during the merger proceeding, to counter these arguments. According to Hausman, AT&T's economic analysis blurs the distinction between @Home and the cable operators. Hausman asserts that a choice among ISPs that are paying for access to the cable system "should produce at least the same revenue stream ... and possibly more if a choice of ISPs stimulates [demand for the service]."[80]

GTE also asserts that AT&T's argument that exclusivity is necessary to offset the risks of providing a new service "undercuts AT&T's claim that the Internet access market is fully competitive and that cable modem service will have no monopoly or market power position."[81] According to this argument, in a competitive market, @Home would not be able to depend on the surplus profits it should otherwise expect to receive under the shelter of exclusivity because competitors would undercut the price necessary to maintain those profits.[82] The inference is that if AT&T argues to preserve the shelter of exclusivity, it must be because the market is not competitive.

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[75] Comments of AOL, Exhibit I.
[76] See Owens paper, p. 17 ("Bundling may alleviate a 'Tragedy of the Commons'").
[77] Comments of AT&T, p.37.
[78] Comments of AT&T, Exhibit C, p. 8.
[79] Comments of LACOA, Exhibit 39, p. 15.
[80] Reply comments of GTE, "The Economics of Open Access," May 14, 1999, p. 1.
[81] Reply comments of GTE: The Economics of Open Access, May 14, 1999, p.3.
[82] Id.

GTE characterizes the argument too narrowly. The purpose of exclusive contracts is to protect parties from actual and potential competition. Parties that benefit from such arrangements have a degree of financial security that is attractive to investors. Removing that security necessarily increases risks associated with investment and reduces incentives to invest. The greater the likelihood of competition, the greater the risk associated with abandoning exclusive deals. A regulatory decision that prohibits exclusivity in order to protect consumers from "unfair" or "restrictive" practices in an emerging market risks diminishing incentives to investment in the protected party's business.

The openNET Coalition included in its filings newsletters of the Legg Mason Precursor Group ("TPG"). TPG's April 19, 1999 newsletter describes what it claims to be "The Whole Investment Story." According to the newsletter, cable concerns about allowing unaffiliated ISPs access to the cable plant stem less from the desire to be the only high-speed data service and more from the fear that cable's core product will be marginalized by Internet video distribution technology. It is this possibility that leads TPG to assert that "the issue of cable open access remains one of the sector's most important unresolved pillar investment assumptions."[83]

The Agency is not in any position to decide who wins this battle of the investment experts. We are inclined, however, to mistrust predictions about the loss of financial support for advanced cable services. Cable system upgrades have continued at a rapid pace since implementation of rate regulation.[84] The resale, interconnection and unbundling provisions of the 1996 Telecom Act and the battles that followed neither inhibited mergers nor dissuaded LECs from offering advanced services like xDSL.

Unfortunately, none of the parties submitted anything but informed speculations on the correlation between investment and regulation. Given that the demand for Internet bandwidth is insatiable at the moment, requiring even a major restructuring of an Internet access company's business plan appears to have only short-term consequences. It is difficult to imagine how, in the long term, the winners will be anyone other than those who deploy their facilities despite the costs of complying with new regulations. Moreover, if the TPG newsletter is correct about the threat of the Internet to cable, then cable investments will be in trouble with or without open access unless cable controls all means of broadband access to the Internet, which is a dubious proposition at best. Even if the broadband market were to take on that character, that is, as a broadband monopoly controlled by the cable industry, the government will not have lost the ability to intervene.

The Agency understands that it must carefully weigh the implications of regulation on investment in infrastructure. It acknowledges that new regulations may lower investment incentives temporarily depending on the nature of the regulations imposed. Along those lines, minimal regulation, if any, is much more attractive than any far-reaching regulatory

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[83] Comments of openNET, "Helping Investors Anticipate Change", TPG Newsletter, April 19, 1999.

[84] MediaOne and Time Warner remind the City regularly of the hundreds of millions of dollars invested to upgrade L.A. systems. LACOA argues, "The cable industry is investing billions to build high-speed connections to homes across the country." Reply Comments of LACOA, p. 2.

system involving price-setting and complex administrative processes.[85] The goal of the City should be to ensure that any new regulation not be so onerous as to capsize existing incentives to deploy advanced services.

### 3. Technical Feasibility

The technical requirements for open access depend on the proposed definition of open access that is adopted. In its investigation, the Agency encountered a variety of open access proposals, some content-oriented and others focused on system architecture. Proposals for open access included service unbundling, peering/transit, open platform proposals, and leased access.

At the outset, it is essential to determine how a specific proposal affects the rollout of DOCSIS-certified cable modems and headend equipment.[86] To the extent a proposal is not compatible with DOCSIS, delays in the rollout of cable modem service may result if existing equipment has to be replaced by equipment that is capable of open access.

Proponents have suggested that this delay could be minimized to around six months.[87] Others suggest that, depending on the scope of the changes, the delay could be significantly longer.[88]

Finally, proposals to open the cable modem platform and use system capacity for unaffiliated ISPs must take into account the effect on an operator's ability to offer competitive local phone service.

#### a. Service Unbundling

The cable modem platform appears to be technically capable of service unbundling, which in this context means separating content from access/transport. @Home's system as it is currently configured allows subscribers to single "click through" to alternate service providers. Because cable modem service is "always on," a subscriber need only activate a service provider's desktop software to access the Internet at cable modem performance speeds.[89]

The FCC anticipated this issue in a paper written by Barbara Espin in the Office of Policy and Planning.[90] According to Esbin: "Short of record evidence to the effect that the cable Internet platform currently stands as an essential barrier to ISPs reaching their customers, the better approach would be to forbear from imposing [unbundling] on cable provided-Internet access services..."[91]

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[85] AOL appears to agree. Comments of AOL at p. 7.

[86] See Glossary for definition.

[87] Reply Comments of GTE, p. 7.

[88] Laubach Draft, pp. 15-16, 18 (see below note 117).

[89] See Pepper Letter, referenced throughout.

[90] "Internet Over Cable: Defining The Future In Terms Of The Past," FCC Staff Working Paper on Regulatory Categories and the Internet, September 3, 1998.

[91] Id. at p. 117.

The present debate over unbundling appears to focus primarily on pricing structures and not on technical feasibility. Because a single "click through" arrangement requires two accounts, a cable modem account and an ISP or an online service provider (OSP)[92] account, proponents of service unbundling argue that subscribers unfairly "pay twice," once for the content of the affiliate ISP and once for the content of the preferred ISP.[93]

America Online suggests that this extra payment is equivalent to cable television buy-through obligations whereby cable customers had to buy packages of undesired cable channels in order to obtain desired premium services like HBO or Showtime.[94] The 1992 Cable Act prohibited these buy-through arrangements, and proponents argue that this prohibition should be adopted for cable modem services.[95]

Specifically, proponents suggest that subscribers should be given the option of paying the cable company for Internet access without paying for content so they can purchase an unaffiliated ISP or online service. For both services, the subscriber should expect to pay no more than the price of the bundled service of the affiliate ISP. In the alternative, service unbundling means that unaffiliated ISPs could contract with cable operators to resell cable modem access services. The ISPs would be permitted to purchase the cable company's access services at a wholesale price calculated on the basis of the revenue-sharing arrangement between cable operators and cable modem service providers.[96]

Opponents of unbundling argue that cable modem service is integrated in the same way that cable programming services are integrated and that access is subsidized by content. Therefore, according to opponents, unbundling would not guarantee that the price for access/transport would be less than the price of the bundled package.[97] They further argue that the decision of an OSP to run a subscription service is a business decision on account of which cable companies should not be penalized. Finally, they state that unbundling would require a complex system of tariffed rates.

The buy-through analogy is imperfect. Existing buy-through prohibitions prevent companies from requiring the purchase of a package of cable programming channels (also known as "tiers") in order to obtain other cable programming channels sold on a per channel or per program basis.[98] The anti-buy-through provisions do not prohibit tiers, nor do they prohibit a requirement that subscribers buy one tier in order to obtain other tiers. Moreover, subscribers are required under federal law to "buy through" basic service tier in order to obtain any other video programming.[99]

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[92] See Glossary. OSPs sell proprietary content services, like America Online.

[93] Comments of AOL, p.3.

[94] Additional Comments of AOL, p.2. AOL does not argue that the existing buy-through prohibition is applicable to cable modem services and this report does not address that question.

[95] 47 CFR 76.921(a).

[96] See Comments of GTE Corporation, "The Economics of Open Access," May 14, 1999, p. 7.

[97] Comments of AT&T, p. 22.

[98] 47 CFR 76.921(a).

[99] 47 CFR 76.920.

The weakness of the analogy is evident in the case where a cable company hypothetically offers a choice among OSPs (e.g., America Online, Prodigy, Roadrunner). If applied literally, the federal buy-through provisions would permit cable companies to offer purchase of OSPs on an à la carte basis. Companies also could "bundle" multiple OSPs into a single package, so long as they did not require the purchase of that package in order to obtain access to a "premium service" OSP.

The package that proponents of unbundling are attempting to caste as equivalent to a cable programming service tier consists of the "bundle" of access and content. The proposed prohibited buy-through is the required purchase of one access/content provider in order to obtain a second content provider. By analogy, it could be suggested that a single cable channel is also a package, consisting of the "bundle" of delivery and content. If so, existing buy-through provisions would prohibit requiring the purchase of one cable channel in order to obtain the content of another cable channel.

The problem with the unbundling proposals, as submitted, is that they confuse services bundling in the cable context with network element bundling in the common carrier context. According to open access unbundling proposals, access/transport and content are separate elements that competitive providers should be able to access and resell. This requirement would be more onerous than requirements currently imposed on competitive local exchange carriers (CLECs). Under the Telecommunications Act of 1996, only incumbent local exchange carriers (ILECS) are required to "unbundle" network elements like access and transport.[100] CLECS must permit resale of their telecommunications services, but unless they are reclassified as ILECs, even facilities-based CLECs are under no obligation to unbundle their network elements.[101]

In spite of these problems with unbundling as proposed, the idea that a subscriber should be able to purchase an unaffiliated content provider without purchasing the content service of an affiliated ISP is not wholly unreasonable. Internet services are new creatures of law and consumer dissatisfaction with a sole source provider might warrant a regulatory framework that encourages competitive alternatives.

Moreover, this regulatory option for open access does not require any changes or additions to the existing DOCSIS-based environment and could be implemented without any significant delay.

### b. Peering/Transit Arrangements

The technical problems of peering/transit arrangements with local ISPs are also minimal.[102] These arrangements facilitate access speeds by allowing local ISPs to interconnect to the affiliate ISP's network at a local "carrier hotel," thereby bypassing the

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[100] Telecommunications Act of 1996, § 251(c).

[101] Id. at §§ 251(a,b).

[102] "Peering" is a mutually beneficial arrangement made between Internet backbone providers to allow interconnection at public and private exchange points in order to share data traffic and thereby maximize network efficiency. A "transit" agreement is a peering arrangement in which one party pays the other party for use of their backbone network.

Internet "cloud." @Home states that the company "actively peers" with "almost all major traffic carriers on the Internet."[103] In addition, @Home "is expanding its interconnect options through physical co-location in major "carrier hotel" facilities,[104] including facilities in Los Angeles and Seattle.

"Peering" as an open access alternative arose first in the Seattle context. Apparently due to dissatisfaction with local dial-up ISPs that carried educational and government content, Seattle convinced AT&T to agree to permit those ISPs to interconnect at no charge with @Home at the Westin Building, a downtown Seattle "carrier hotel" to which @Home was interconnected.[105] In addition, AT&T agreed to work out reasonable transit agreements with other local ISPs.

However, as indicated below, peering/transit may have been an acceptable compromise in Seattle at the time of the merger, but it is not the solution that proponents of open access are seeking.

c. Open Platform Proposals

"Peering," as it was accomplished in Seattle, may help to alleviate the problems Los Angeles educational institutions may be having with local ISPs. But it does not satisfy those ISPs that believe a lack of access to the last mile and an inability to offer a broadband service could shut them out of a media-rich Internet service market. They want nondiscriminatory access to the cable infrastructure so that they can offer a broadband product that is completely independent of the affiliate ISP's service.[106]

During the FCC's deliberations of the AT&T-TCI merger, advocates of open access submitted a number of proposals upon which they based the argument that it is technically feasible to open the cable modem platform to multiple ISPs. Although opponents challenged those open platform proposals, the general sentiment was expressed by AOL's Vice President for Broadband Development, Mario Vecchi: "If you want a solution to a difficult problem, place two engineers in a room by themselves and tell them that you have a problem that cannot be solved." As Milo Medin, Chief Technology Officer at @Home, liked to say: "We had a saying at NASA: If you have enough thrust, you can make anything fly."

The proposition that a workable, if less than ideal, open access system could be developed was not disputed. Proponents cited efforts in Canada and Alabama to support their position.[107] Recently, the Canadian government ordered cable companies to open their cable modem platforms for unaffiliated ISPs and a group of American and Canadian companies are conducting tests toward that end. In its comments on the TCI-AT&T

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[103] Comments of @Home, p. 5.
[104] Id.
[105] Transfer ordinance located at www.ci.seattle.wa.us/cable/leg/attxfer5.htm, see § 1(c)(3).
[106] Comments of America Online, "White Paper on Open Access," p. 2, 7. Reply comments of AOL, p. 3. Reply Comments of GTE, p. 3.
[107] Comments of GTE, p.19.

merger, Mindspring revealed that it was connected to a multiple provider platform on a system built by Knology Cable in Alabama.[108]

However, Canada's open access order has not been implemented beyond the trial stage and Canadian ISPs appear to have disputed Canadian open access proposals.[109] @Home, which has a significant presence in Canada, is deploying its closed systems in Canada notwithstanding the Canadian open access order. In addition, Mindspring's failure to disclose its ownership interest in Knology raised doubts about the workability of the Alabama project.[110]

In its March 24, 1999 filings with the City of Los Angeles, GTE proposed two solutions that, in its view, are compatible with cable modem services offered on a hybrid fiber-coax (HFC) cable system. In each case, GTE adds that an open access "system could be implemented ... using commercially available products."[111]

@Home's response to these open access proposals is twofold. First, the proposals all rely on a type of addressing ("source address based routing") that is not contemplated under existing versions of DOCSIS.[112] Second, open access proposals do not satisfactorily resolve the congestion and interference issues raised when a shared media system, like a cable system, is converted into a multiple ISP environment.[113]

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[108] See "Knology Buying Cable Alabama System", Multichannel News, September 3, 1998.

[109] "The Canadian Association of Internet Providers ("CAIP") attacks [a technical report supporting open access] as 'presenting a one-sided view ... which ... could leave the Commission with the impression that the [Canadian ISPs] are in agreement with the contents of the [Canadian Cable Television Association] reports." Memorandum of Dow, Lohnes & Albertson regarding "AOL Ex Parte Presentation: Third Party Residential Access for ISPs" dated January 5, 1999, p. 1n1, citing a CAIP letter dated December 10, 1998

[110] But see Laubach Draft, p. 5 ("At this time, there are cable overbuilders (e.g., Knology, southeast U.S.) who are using Layer 3 approaches ... to provide less than ideal, but workable, open access provisioning.")

[111] Comments of GTE, p. 9. One proposal places an address management server (a "Dynamic Host Configuration Protocol" or DHCP server) at each ISP and a "forwarder/router" at the cable headend. Every subscriber is assigned an IP address that is recognized by the forwarder/router, which directs that subscriber's data to his or her ISP and vice versa. The connection between the forwarder/router and the ISP may be a physical connection, like a leased data line, or a Permanent Virtual Circuit (PVC), a data connection created by programming as opposed to hardware.

The second GTE proposal places a "subscriber management system (SMS)" at the cable headend and a more advanced address management server ("Remote Authentication Dial In User Service" or RADIUS server) at the ISP. This system relies on a new protocol ("Point to Point Protocol over Ethernet" or PPPoE) to assign IP addresses dynamically to users. In this instance, the user who wants to access an available unaffiliated ISP would have to install additional software on his or her computer. This relatively easy installation could be handled by downloading the software from the ISP's web site on the Internet.

[112] Comments of @Home, p. 8. DOCSIS (Data Over Cable System Interface Specifications) is a nonproprietary set of standards and specifications developed jointly by cable and cable modem equipment vendors. DOCSIS certified cable modems and cable modem headend systems are interoperable in that they will work on any other DOCSIS certified system, regardless of who manufactured the system or who operates the system.

[113] See also Comments of Time Warner, "Internet Access Over Cable: A Cause for Celebration, Not Regulation," pp. 33 ff.

GTE argues that the problems of interference and congestion do not change when a platform migrates from a single provider to multiple providers.[114] "Bandwidth hogs" can dominate the system's capacity in either case.

Although this assertion is true, what GTE does not answer sufficiently is how the cable operator will be able to control users and/or providers so that discrimination claims are minimized. ISP A, for example, may claim that its subscribers are suffering from poor service unfairly because the cable operator's network manager is constraining those subscribers in favor or the affiliate ISP's subscribers. What ISP A does not know, because ISP A is not managing the network between the headend and its subscribers, is that the problem is caused by a subscriber of ISP B, another unaffiliated ISP, who is using up all the available bandwidth.

In its March 24, 1999 filing, GTE minimizes the problem of discrimination and asserts "normal market incentives should motivate the cable operator to allocate sufficient capacity to all ISPs."[115] Yet in its reply comments dated May 14, 1999, GTE acknowledges the need for a dispute resolution mechanism and proposes as that mechanism the use of an Agency breach hearing and/or arbitration.[116]

In March 1999, the Agency uncovered evidence that multiple provider platforms were not only feasible, they were already in use. In Pasadena, California, and at other locations around the country, cable operators had installed proprietary CMTSs that were not DOCSIS certified but were capable of connecting up to 20 different ISPs. These systems were not actually provisioning subscribers with access to multiple ISPs. But they were built to do so.[117]

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[114] Comments of GTE, p. 15.

[115] Id.

[116] Reply comments of GTE, p. 3.

[117] Mark Laubach, former Vice President of Com21, a Silicon Valley cable modem equipment vendor, has supplied the Agency with a draft white paper written for the White House National Economic Council entitled "Comments on the Technical Ability to Implement Open Access Provisioning via High Speed Data Over Hybrid Fiber Coaxial Cable Television Systems in the United States" ["Laubach Draft" throughout]. In the paper, he describes the system that he helped to develop as "the only one that directly supports open access provisioning by use of direct Layer 2 Virtual LAN support and ATM networking."

Laubach's technical analysis of open access is worthy of elaboration. In it he assesses the viability of solutions at each layer of a networking stack. Layer 1 open access is access at the "physical layer." The physical layer of the networking stack uses RF (radio frequency) channels. Open access at the physical layer requires a separate CMTS using dedicated upstream and downstream channels. He concludes that open access at this level is not workable because there is not sufficient upstream or downstream bandwidth for multiple ISPs and because FCC regulations require cable operators to manage all headend equipment for egress.

Layer 2 open access is access at the "data link layer" where a variety of protocols reside including Ethernet and DOCSIS MAC. DOCSIS version 1.0 transforms cable systems into a large Ethernet based LAN by installing the required protocols at Layer 2. Open access at Layer 2 can be accomplished by a variety of methods, including virtual LANs (VLANs) or ATM. The use of ATM addresses several limitations of VLANs including scalability. However, DOCSIS does not currently support ATM as a method of networking and its VLAN capability is too limited for full open access.

Layer 3 is the networking layer. It is also the layer where vendors will augment their data services with virtual private networking and Internet telephony (voice over IP). Open access at Layer 3 is open access using various methods of forwarding (recall GTE's proposal) and "tunneling." Forwarding

At that point in the investigation, the questions regarding technical feasibility changed direction. Instead of focussing on whether or not open access was possible, attention shifted to problems of operational support, network management, service provisioning, security, provider/subscriber containment and dispute resolution. New questions arose including the following: Were these systems scalable? Could they multicast? What changes to DOCSIS would be necessary to give DOCSIS-certified systems the same functionality?

Complete answers to these questions are still pending. It is fairly clear that current versions of DOCSIS would have to be revised to support anything other than rudimentary open access solutions.[118] GTE and AOL describe in basic terms some options for service provisioning and maintenance and bandwidth management, and then assert that these issues can be addressed in commercial agreements between cable operators and ISPs.[119] They suggest that the unaffiliated ISP could subcontract installation and maintenance to a cable operator whose parent owns the affiliate ISP.[120]

The Agency is not suggesting that the problem raised by these operational issues cannot be solved, only that they are not simple issues amenable to simple solutions.

### d. Leased Access

The leased access provisions of the 1984 Cable Act were intended to provide unaffiliated commercial programmers with access to cable channel capacity for video programming.[121] Recognizing that leased access charges might be prohibitive, the FCC established formulas that placed a value on channel capacity consistent with the use of the channel by cable programmers. The FCC has not directly addressed the question of whether or not Internet services falls under the scope of video programming. However, in its closed captioning order, the FCC states that Internet services fall into the category of "other services" and are not appropriately characterized as video programming.[122]

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solutions, including source address based routing, have not been fully analyzed according to Laubach. (Medin asserts that source addressing is not contemplated under existing versions of DOCSIS.) According to Laubach, this method is used by Knology in Alabama. He considers Knology's approach "workable, but less than ideal." Tunneling is an IP-based virtual circuit solution for open access. It allows the cable operator to manage IP addresses between the headend and the cable modem, while ISPs manage addresses that "flow through the tunnel." Neither of these solutions can be implemented in the DOCSIS environment without some modification.

[118] See Laubach Draft, above.

[119] Further Comments of GTE, pp. 11; Reply Comments of AOL, p. 5.

[120] Comments of AOL, p. 5.

[121] 47 U.S.C. § 532.

[122] The FCC Report and Order states: "...the statute [that] does not contemplate Internet programming as 'video programming' specifically includes 'other services that provide programming to the public' ...which could encompass Internet services. See In the Matter of Closed Captioning and Video Description of Video Programming Implementation of Section 305 of the Telecommunications Act of 1996 Video Programming Capability, MM Docket No. 95-176, August 22, 1997 released, fn. 784.

Leased access emerged as an option early in the debate on open access. A Redondo Beach-based ISP, Internet Ventures, Inc. (IVI), rejected the approach that the openNET Coalition took, which was asking government bodes to adopt open access rules for cable modem service. Instead, IVI decided to press the question of the applicability of leased access, asserting that Internet service could be characterized as a form of video programming. Failing in its efforts to obtain access under these provisions, IVI has petitioned the FCC for a ruling on the question.[123]

At the May 10, 1999 roundtable, a debate developed between proponents over the issue of multiple ISPs sharing bandwidth. Digilink, an L.A.-base ISP, expressed concern about its ability to guarantee customers a certain quality and level of service. He argued that his ISP needed a dedicated channel on the cable system in order to make this guarantee. He did not propose leased access as an option, but when raised as a possibility, his response was "Why not?"

America Online answered Digilink by suggesting that adequate service guarantees could be made without changes to the physical layer.[124] In their reply comments, AOL added: "The allocation of precious and finite radio frequency ("RF") spectrum capacity over the cable plant is not the preferred method to implement open access. It is preferable to define internetworking solutions that allow for the management of access resources in a flexible way, without requiring the physical partitioning of RF spectrum."[125] At least one engineer familiar with open cable modem platforms concludes that open access at the physical layer (RF channel layer) is not workable.[126]

Even discounting the legal problems associated with leased access, the Agency does not believe that leased access is the preferred method of open access. Dedicated channel capacity may diminish inter-ISP and ISP-operator disputes, but it is an inefficient use of system capacity and places low limits on the number of ISPs who could be granted access to a given system. Moreover, leased access was not intended for services requiring upstream bandwidth, which is very limited and essential in the provision of telephony. Leased access of upstream channel capacity could undermine an operator's ability to offer competitive local phone service.

## REGULATORY OPTIONS: THREE ALTERNATIVES

This section suggests three regulatory proposals and analyzes the most compelling arguments for each of the proposals:

1. Wait-and-See
2. Mandate Open Access
3. Condition the Provision of Cable Modem Service

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[123] Multichannel News Online, www.multichannel.com, June 1, 1999.

[124] See Laubach Draft, note 117 above. The "physical layer" of a network stack is the layer that defines the use of RF for data transmission.

[125] Reply comments of AOL, p. 8.

[126] See Laubach Draft, note 117 above.

### 1. Wait-and-See

Regulatory Proposal:

*Wait on the decision to intervene in the market for broadband Internet access services until market conditions clearly warrant intervention.*

Summary:

*Pros*

*1. Federal policy supports letting the Internet thrive unfettered by regulation. The market for broadband Internet access is fledgling but preconditions for monopoly appear not to exist because potential competitors include cable modems, DSL, wireless, and satellite.*
*2. It is likely that intervention will have negative effects on investment in and deployment of broadband in Los Angeles.*
*3. The City does not waive or lose its ability to intervene should condition warrant intervention.*

*Cons*

*1. Alternative #1 is too confident about the development of a competitive market. The market is imperfect and there are signs that there is little incentive to correct those imperfections.*
*2. There are legitimate concerns that a "hands-off wait-and-see" approach do not address, including universal availability and rapid deployment of the service.*

Argument:

The Internet is a relatively new phenomenon that has flourished in the absence regulation. It is the policy of the United States Government to encourage the continued growth of the Internet "unfettered by Federal or State regulation."[127]

In this context, regulation that is not necessary to prevent market dysfunction could be a mistake. Such regulation could introduce costs into the market that may discourage investment and innovation. Only if the City determines that regulation is necessary, should the City take any action. Today, the Agency cannot make that determination.

Moreover, if the problem is protecting consumers from the monopolistic practices of broadband providers, like high prices and unreliable service, the best solution is an active and competitive market.

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[127] 47 U.S.C. § 230(b)(2).

The FCC's analysis of advanced telecommunications capability was guided by the same set of assumptions. After a careful and thorough analysis of the market for broadband Internet access, the FCC determined that the market was "fledgling" and that "preconditions for monopoly appear absent."[128] Nevertheless, the FCC pledged to monitor developments in the market because the establishment of either a monopoly or a duopoly "would not perform well for consumers."[129]

As stated above, the Agency does not find any reason to recommend that the City differ with the FCC's approach. The market for broadband Internet access services is developing in Los Angeles on an aggressive schedule with multiple providers marketing wireline and wireless services.

Broadband alternatives are already being marketed in Los Angeles. SBC recently pledged to make all 255 California central offices DSL-ready and is marketing Pacific Bell's Fas Trak DSL product aggressively throughout the City. GTE, Covad, Concentric, Verio and several other companies are marketing their own DSL brands. Winstar and Teligent are actively selling a two-way wireless broadband service in the City.

In addition to these existing services, additional broadband alternatives to cable modems will be available in Los Angeles in the very near future. Tele TV, a wireless cable company with 30,000 subscribers in Los Angeles and Orange Counties is investigating a two-way broadband product designed for wireless cable systems. DirecTV is launching Spaceway, a satellite based broadband service expected to be available in Los Angeles by 2003. Northpoint Communications, another DSL provider active in Los Angeles, is exploring wireless local loop technology as a viable means of introducing facilities-based competition in local exchange services and broadband Internet access services. Teledesic, an adventurous satellite project funded by Craig McCaw and Bill Gates is already launching low earth orbit satellites that will become a global satellite network capable of high-speed voice, video, and data communications.

The market for broadband appears at this stage to be expanding rapidly and to be highly competitive. Arguments that speed, price and reach of the various platforms differ enough to mark cable modems as the preferred technology are not convincing. Speed, price and reach of different broadband platforms are converging, and solutions to the problem of the reach of DSL are being developed.

Concerns about cable acting as an Internet gatekeeper limiting the diversity of information sources and services available to broadband subscribers do not appear to be warranted. These concerns are only relevant in a market where competitive alternatives do not exist. @Home's MDA is problematic only if there are no comparable alternatives to @Home. Otherwise, @Home is doing no more than developing reasonable business arrangements with content providers while it looks

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[128] FCC 706 Report, para. 48.

[129] FCC 706 Report, para. 52.

out for the interests of its owners. Practically speaking, none of the blocking provisions in the MDA has ever been invoked. Moreover, AT&T has agreed with the FCC that it will preserve unfettered access to the Internet and will permit subscribers to access their own ISP without having to click through @Home.

The market for broadband Internet access services has all the signs of becoming a healthy market. Cable-companies face a number of hurdles that they must overcome if their product is going to be successful and/or preferred. They must prove that the product is reliable. They must alter the public's perception that they are not sensitive to consumers needs. That perception alone could become a major competitive disadvantage that cable will have to overcome in order to be competitive. In this market, cable can ill afford to treat consumers as if they are captive to cable.

### 2. Mandate Open Access

Regulatory Proposal:

1. *Impose a requirement that allows customers to purchase the Internet services of unaffiliated ISPs without having to purchase ("buy through") the Internet service of the affiliate ISP.*

2. *Impose a requirement that access to the cable modem platform/cable architecture be available on a nondiscriminatory basis to unaffiliated ISPs on terms and conditions equal to terms and conditions of the affiliate ISP.*

Summary:

*Pros*

*1. Internet is an open platform phenomenon the success of which is based on its openness; cable should not be allowed to change that orientation.*
*2. The high-speed Internet access market is far from perfect and cable modems may dominate that market.*
*3. Cable companies are highly incentivized to control the Internet because it will become an alternative method of video distribution; open access prevents that control.*
*4. The arguments that open access is neither technically nor financially feasible are not convincing.*

*Cons*

*1. The problem that open access addresses does not currently exist and, given the likelihood of a competitive broadband access market, is unlikely to occur.*
*2. Open access will require expensive and burdensome regulatory and administrative enforcement mechanisms.*

*3. Open access will lead to expensive litigation that delays deployment of the service to the public.*

Argument:

The growth of the Internet is due in large measure to the commitment of its founders to share technology and ideas. TCP/IP, the Internet protocol that makes it possible for information to be transmitted among disparate and incompatible computer networks, was the product of a cooperative effort, its code was freely available to any interested programmer. Neither Netscape, nor its precursor Mosaic, were products placed on the market. They were given away. Netscape generated income by developing supporting applications, not by hiding the base code for its browser under a proprietary shield.

This openness distinguished the Internet from proprietary alternatives like America Online, Compuserve and Prodigy. America Online's content service remains a closed proprietary environment, a subscription service much like cable television. The difference between America Online and cable television service is the platform on which they ride. America Online provides its service over a common carrier system subject to access and interconnection obligations. Cable modems and other cable services are offered on a largely closed system that guards its content and capacity. America Online's dial-up narrowband Internet access service is one of several thousand similar services that share the telephone system and compete with America Online for subscribers.

Cable television's broadband Internet access service providers, of which there are only a handful, do not share any single cable system.[130] They are protected from competition by exclusive contracts. Moreover, those broadband services that are affiliated with cable companies act as an effective bar on the entry of unaffiliated providers into the cable broadband market.

Open access seeks to change this arrangement at no detriment to cable's Internet revenues or @Home's content and access services. In fact, the only difference between the exclusivity protections that @Home currently enjoys and open access is that, under open access, @Home will have to convince its subscribers that its service should be preferred over its competitors.

There is support for this economic analysis. Variety in a market has been shown to increase the value of the market, even to the benefit of original entrants.[131] By offering customers a choice of high-speed ISPs, cable companies will penetrate deeper into their Internet customer base. Customers who would not otherwise switch from their current ISPs will have the simple option of upgrading to a broadband

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[130] With the pending acquisition of MediaOne by AT&T, the number may decrease given a strong incentive to merge MediaOne's broadband Internet company, Roadrunner, with @Home.

[131] Mackie-Mason, Comments of AOL, Exhibit I.

version of the same product, retaining their email address and any preferred content features of their current ISP.

Cable companies argue that customers have that ability today because they can single "click through" @Home to their current ISP. But this feature appears to be an arrangement worked out with the FCC that may be only temporary. Also, under the current "pay twice" system, customers are discouraged from switching by the hassle of dealing with two companies, one of whom they may not want as a provider.

Open access can increase consumer confidence in the cable product. Unaffiliated ISPs will exert pressure on cable companies to improve their quality of service because poor service will hurt their business. Because unaffiliated ISPs will pay for access to the system, cable operators will have an additional source of revenue to assist in the cost of upgrades and to strengthen their customer service and system support divisions.

It is technically possible to connect subscribers to multiple providers over the cable plant. The actual method chosen to accomplish this end should be developed by an industry consortium and not dictated by government. But the argument that it is not technically feasible is not convincing: multi-provider cable modem platforms are already in use around the country. These systems can be made DOCSIS-compliant without undermining the extensive work that has already gone into developing a DOCSIS standard for the industry. Further, operational support systems for back office functions are already in place in the telephone industry. These systems can be easily adapted to the cable business.

Open access ensures that consumers have access to the entire Internet while preserving an affiliated ISP's ability to block content for commercial reasons or because it is objectionable to the ISP. This feature of open access allows ISPs to differentiate their products and develop brand identities without sacrificing the widest possible diversity of information sources and services over cable.

In the absence of open access, existing competition may be insufficient to protect consumers. No system requiring a separate telephone return path is effective competition to two-way "always on" services. Two-way wireless services that are currently available are expensive and are predominantly business services. Other two-way wireless services, such as satellite, are still highly speculative.[132] Comparably priced DSL services are significantly slower than cable modems and are not available to a large percentage of Los Angeles residents. Utility-based services, like satellite, are also still highly speculative. The market may need open access to jump start broadband Internet services and to prevent cable-affiliated ISPs from becoming the sole source of broadband Internet content.

Finally, open access may not have to introduce unnecessary regulatory burdens on the Internet. First, there is already a precedent for regulating the infrastructure on which

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[132] But see "Two-Way Data Traffic Via Satellite Thrives," Multichannel News, May 31, 1999, p. 63.

the Internet rides, Title II of the Communications Act of 1934. However, the Agency is aware of only one ISP that has taken the position that cable modem services be classified as Title II services.[133] Open access does not require a regulatory framework comparable to Title II. It is limited regulation that will not inhibit the growth or success of the Internet.[134]

The City of Los Angeles has several mechanisms for implementing open access. We can condition transfers, adopt franchise provisions both in the form of amendments and as part of renewed franchises, and we can adopt customer service standards.

Of the three mechanisms, customer service standards are expeditious but they present some difficulties. They are expeditious because they do not require a negotiated agreement with cable companies. Cities have unilateral authority to adopt standards more stringent than federal or state standards. However, there is some question about the scope of customer standards. Congress, in adopting the first consumer service standards in the 1984 Cable Act, describes customer service as "the direct business relation between a cable operator and a subscriber."[135] Customer service standards can not be used, for example, to impose rate regulation even if they control the content of bill statements.

Whatever mechanism chosen, open access serves Los Angeles consumers and businesses and does not harm cable operators in their ability to exercise the full range of opportunities their plant allows.

### 3. Condition the Provision of Cable Modem Service

Regulatory Proposal:

*Define a set of conditions that govern the provision of cable modem service in Los Angeles including scheduled deployment, access to all Internet content without limitation, universal availability of the service, technical standards, application of the consumer service standards, payment of cable franchise fees for cable modem service, and a market-based reopener to secure open access if market failure demonstrates that the need is clear and present.*

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[133] According to "FCC and NTIA Would Take 2nd Look at Broadband Under McCain Bill," Communications Daily, April 14, 1999, Mindspring CEO Charles Brewer testified before the Senate Commerce Committee that it is "beyond absurd" to not treat Internet services as telecom services.

[134] They would not make that argument anyway, given the current prohibition on the regulation of cable systems as a common carrier. 47 USC 541(c). For the description of open access as light touch regulation see comments of AOL, Exhibit 1 at p. 7.

[135] Reply Comments of Time Warner, p. 12. See House Report 98-934 (1984) at 79.

Summary:

*Pros*

*1. There are problems that currently exist that do not warrant open access but may be remedied by less intrusive measures.*
*2. The time is not right for open access because of arguments for Alternative #1. The government does not lose the ability to order open access if market conditions or other circumstances warrant open access.*
*3. This Alternative is different than Alternative #1 because it addresses existing problems.*

*Cons*

*1. This Alternative is functionally no different than Alternative #1.*
*2. This Alternative does not recognize that an open access order at this stage will be easier to comply with than an open access order in the future because the systems are only now being built.*

Argument:

Scenarios #1 and #2 both rely on assumptions about high-speed Internet services that are not consistent with the Agency's findings.

Scenario #1 is too confident about the emergence of a competitive residential broadband market in Los Angeles. Competition in broadband is in the initial stages of development, but some broadband providers, both wireless and wireline, are targeting businesses, not residents. The sole MMDS provider operating in Los Angeles has not determined whether or not to role out a broadband service and, even if it did, that MMDS provider does not have 100% coverage of Los Angeles. Two-way satellite services and utility-based services are still too speculative to rely on for an accurate market picture. ADSL, the current competitor to residential cable modem service in Los Angeles, covers about 67% of Los Angeles residents and the technical solutions to the geographical limitations of ADSL may be too expensive to implement. No one has argued to the contrary. The current Los Angeles market does not warrant the optimistic outlook reflected in the FCC 706 Report.

On the other hand, open access is not a simple proposition, as Scenario #2 represents. Arguments over the terms offered by cable operators to unaffiliated ISPs will lead to a host of regulations and litigation. Open access will require the City to devote staff and resources to matters it is not presently equipped to address.

For example, AOL proposes a consumer service standard requiring a cable operator to "make its cable modem platform available to affiliated and unaffiliated ISPs on a non-discriminatory basis."[136] Does this standard allow ISPs to connect to a CMTS at

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[136] Reply comments of AOL, p.3.

the headend? Does it grant ISPs collocation rights? Can an ISP require an operator to cage its CMTS equipment or construct a vault for housing CMTS equipment? Will ISPs be required to use DOCSIS-certified cable modems and/or CMTS equipment? Are affiliated and unaffiliated ISPs similarly situated for purposes of a price discrimination claim? How does the City determine if an operator's refusal to do a deal with an ISP constitutes a material breach of the standard, when the deal proposes service tiers and features not offered by other ISPs? Should small operators be exempted from these requirements? Should wireless providers be subject to these requirements?[137]

Proponents claim that these issues are addressed by the proposition that unaffiliated ISPs only want the same terms and conditions as the affiliate ISP. However, this version of open access is more appropriately characterized as "equal access" and is distinguishable from a request for nondiscriminatory access. The latter by definition allows for variations in agreements where a party is requesting to provide services or features not provided by other parties. It also allows discriminatory treatment of providers that are not "similarly situated." Nondiscrimination thereby introduces a level of complexity that would not exist under an equal access system.

For example, Is @Home similarly situated with unaffiliated providers? LACOA would argue that it is not: "The relationship between cable operators and @Home is highly interdependent, and operators and @Home have negotiated a revenue split that reflects not the cost of transport, but rather the investments and expertise that each side brings to the table."[138] Arguably, a nondiscriminatory price could take this affiliate relationship into account.

GTE has suggested that the City is able to address the pricing issue because "claims of pricing discrimination in the cable arena are already handled by the City."[139] This assertion is not accurate. The City's regulation of cable television basic service tier rates involves reviewing forms developed by the FCC to ensure compliance with federal regulations, and, if it finds evidence of noncompliance, orders refunds and orders rates to be returned to compliance levels. This process does not address inter-provider price discrimination claims. To do so, the City would have to commit additional staff and resources and would have to develop a regulatory framework capable of addressing such claims.

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[137] Consistent with the State of California Video Customer Service Act, the City of Los Angeles Consolidated Consumer Service Standards apply to all multichannel video providers that serve customers within the City limits, including satellite companies and wireless cable companies. No party has expressly proposed application of open access rules to wireless services, but no party that proposes use of the CCSS has explained why their proposals are limited to cable companies. In fact, in its reply comments, AOL uses the term "Company" without the qualifier "franchised by the City" which suggests that AOL would have the City apply open access to all multichannel video providers. However, AOL does not provide any legal justification for so doing.

[138] Reply comments of LACOA, p. 5.

[139] Comments of GTE, p. 11.

As suggested by some panelists at the May 10, 1999 roundtables, the Board of Information Technology Commissioners could issue advisory opinions on some of these issues, assuming the Agency and the Board had access to reliable expert opinion on which to base those opinions. Whether or not those advisory opinions could provide the basis for a finding of breach is uncertain.

Both the Consolidated Consumer Service Standards and the City's cable television franchises contain remedies for breach and a process the City must follow in determining whether or not a breach exists, including notice and time to cure. It is difficult to imagine a court permitting an ISP to bypass these remedies. If not, the City will have to establish administrative procedures and guidelines for addressing disputes and will have to address complex issues it is not prepared to address.

The FCC was faced with a similar situation in resolving program access and leased access disputes. Program access rules require a proceeding before the FCC guided by substantive and procedural rules that fill 13 pages of text in the Code of Federal Regulations (CFR).[140] The rules define key terms, list prohibited practices, and lay out several pages of procedural rules governing adjudicatory proceedings that discuss notice, complaint, answer, discovery, confidentiality and damages, among others. Leased access rules fill five pages of text in the CFR.[141] The rules define key terms, adopt rate-setting formulas, detail prohibitions and requirements and establish dispute resolution alternatives, including recourse to district court, alternative dispute resolution (ADR), or the FCC.

Neither the leased access rules nor the program access rules could be easily adapted to the open access context. They assume federal jurisdiction, not local, and they address issues that only make sense in the context of those services. For example, program access rules distinguish served areas from unserved areas because cable programmers distribute their product via satellite to unaffiliated cable operators. The @Home Network serves only affiliated cable operators. There is a turn-key product for small systems that @Home has developed, but it is not so widely used that the distinction between served and unserved is necessary or appropriate. In the leased access regulations, several sections describe a formula that is developed to value channel capacity for video programming. That formula is not applicable to the cable modem context.

The point is that a set of regulations will have to be promulgated that address disputes that are specific to cable modem services. These regulations will take time to develop and will require dedicated City resources.

Should the City decide that it is too early for full-scale open access requirements or that the effects of such a policy need further investigation, the City could consider a number of less intrusive but not less important measures, which are detailed below:

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[140] 47 C.F.R. 76.1000, Subpart O ("Competitive Access to Cable Programming").

[141] 47 C.F.R. 970 et seq.

### a. Rapid Deployment Schedule and Construction Schedule

As one of the primary goals of the City, cable operators should be encouraged to deploy broadband services as rapidly as possible. Operators, under this requirement, would submit a deployment schedule.

If deployment is not possible because the system is not ready for deployment, then the operator should meet with City staff and be prepared to detail a schedule for upgrade.[142]

### b. Access to Internet Content and Unaffiliated ISPs on a Single "Click Through" Basis

Require that cable modem services remove limitations on access to content on the Internet and apply the agreement between AT&T and the FCC to permit single click-through access to unaffiliated ISPs or OSPs to all cable operators.

### c. Universal Availability of the Service

On January 26, 1999, the City Council resolution ordered a study on open access and directed the Agency to review the City's Universal Service/Access Policy and any other pertinent federal or state legislative measures on the subject of universal access to cable modem services. The Agency were instructed to report back to the City Council with recommended changes, if any, in the policy.

The Universal Service/Access Policy states:

> "The ubiquitous and permanent availability of an affordable, minimum level of quality telecommunications services and informational programs provided on a nondiscriminatory basis, irrespective of income, disability, ethnicity, or geographic location that is required for a person to participate effectively in society with a due deference to the fundamental right to privacy.[143]

The FCC 706 Report examined the deployment of broadband capability to specific segments of the population, including people in rural and low-income areas, and schools and classrooms, in order to ensure that broadband is being deployed to all Americans.[144] The FCC concluded that, although much of the evidence is anecdotal, specific examples indicate that these areas do not appear to present an intractable barrier to deployment.

Regarding schools and classrooms, the FCC stated its expectation that, as the implementation of the universal service support mechanisms for schools and

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[142] See, e.g., Ordinance No. 170783 (Los Angeles Area C Cable Television Franchise), § 4.4.02.

[143] City of Los Angeles Legislative Policies, (1997-1998).

[144] FCC 706 Report, paras. 66 et. seq.

classrooms continues, deployment of advanced telecommunications capability will become even more widespread. The FCC stated, however, that, if the potential for broadband deployment in these areas is not realized, it would take immediate steps to accelerate deployment of broadband capability.

The City's cable television franchises contain a universal access provision that is applicable to cable modem service. Section 4.3 states; "The Franchisee shall construct and operate the System and System Facilities in all locations throughout the Franchise Area so as to provide service to each Person requesting such Service."[145]

The City's Universal Services/Access Policy and the cable franchises both provide a basis for guaranteeing that all Los Angeles residents will have an opportunity to access the Internet. No changes are needed to the existing language to guarantee access to cable broadband services. The ITA remains committed to ensuring that all communities have access to telecommunications technology and will continue to monitor the nondiscriminatory availability of affordable cable modem services.

### d. Application of Consolidated Consumer Service Standards to Cable Modems

The City of Los Angeles Consolidated Consumer Service Standards currently apply to all multichannel video providers in the City of Los Angeles that provide more than one channel of video programming for a fee, whether or not the public rights-of-way are utilized in the delivery of the video programming. "Service" is defined by the standards as "any level of video programming."[146]

The City should ensure that the CCSS covers cable modem services and thereby affords consumers the same customer service protections for cable modem service that they now receive for cable television services.

### e. Technical Standards for Cable Modem Services

The City and cable franchisees should engage in a coordinated effort to monitor the quality of cable modem service in Los Angeles. Working together, the City and cable operators should define tests and measurements that will enable the City and companies to monitor performance of the service on a regular basis, the timing of which should be mutually agreed upon.

### f. Market-Based Reopener

In the context of any cable television transfer consent ordinance or a change in the franchise agreements (at renewal or otherwise), the City should include a provision that is similar to the following:

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[145] See City of Los Angeles Consolidated Consumer Service Standards, "Definitions."

[146] Note the distinction drawn between video programming and Internet Services described in the leased access discussion, above.

*Parties agree that the Internet services obligations set forth in [Section xx] may be reopened for resolution if any cable television franchisee's high-speed Internet access services capture more than two-thirds of the customers served by high-speed Internet access technology in a geographic area defined by any cable system operated by that Franchisee in the City of Los Angeles.*[147]

g. Collection of Franchise Fees on Cable Modem Revenues

Under federal law and under the City cable franchises, the City is entitled to collect 5% of gross revenues from cable companies. "Gross revenues" is defined as "all amounts, which are charged and, or received, directly or indirectly, by the Company from or in connection with the operation of the System including, without limitation, the distribution of any Service over the System ..."[148] "Service" is defined as "...any Basic Service, any Enhanced Service, or any other service whether or not originated by the Company, which is offered to any Subscriber in conjunction with, or which is distributed over, the System."[149]

Revenues derived from the provision of cable modem service are covered by these definitions and such revenues should be included in the company's calculation of gross revenues for purposes for calculating the applicable franchise fees. The City should be provided with a quarterly statement that lists as a separate line item these revenues.

## RECOMMENDATION

It is the recommendation of City staff that the City Council adopt Alternative #3 as described above. The reasoning behind adoption of this alternative is presented in the alternative. Principally, concerns about the nature of the market for broadband access services warrant continued monitoring. However, the market's ability to grow and develop should not be hindered by regulation that is based on speculative assumptions about the future of the Internet.

The Agency therefore recommends the following:

a) At the present time, the City should not order cable companies to unbundle content from access in the provision of cable modem services;
b) At the present time, the City should not order cable companies to open their cable modem platforms to unaffiliated Internet Service Providers;
c) The City should continue to monitor the market for broadband access services in the City over the next three years as the Information Technology Agency enters into renewal negotiations with cable operators in order to gauge the

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[147] It should be noted that, in the AT&T-TCI transfer consent ordinance passed by the City of Los Angeles on February 2, 1999, AT&T agreed to "comply with all applicable and lawful requirements with respect to nondiscriminatory access to the TCI-ESFV cable modem platform for all providers of Internet and on-line services." (Ordinance. No. 172459, § g).

[148] Ordinance No. 170783, § 1.29.

[149] Id., § 1.38.

necessity of imposing an open access provision in transfers or cable television franchises;

d) The City should require cable companies to submit a cable modem deployment plan and adopt a rapid cable modem deployment schedule in all franchises held by the cable company in the City of Los Angeles;
e) The City should require cable companies to permit unrestricted access to all content on the Internet in addition to allowing subscribers to single "click through" directly to any unaffiliated Internet Service Provider;
f) The City should require cable companies to provide universal access to any cable modem service in a franchise area in which cable modem service is offered;
g) The City should ensure that the Consolidated Consumer Service Standards apply to the provision of cable modem services;
h) The City should work cooperatively with cable operators to develop a set of technical standards applicable to the provision of cable modem services;
i) The City should craft a market-based reopener provision that will be included in all transfer consent ordinances and franchise agreements and that permits the City to order open access if any Los Angeles cable operator exercises control of more than two-thirds of the market for broadband Internet access in a geographic area defined by any cable system operated by that franchisee in the City of Los Angeles;
j) The City should require cable companies to pay franchise fees on all revenues generated by cable modem services.

## CONCLUSION

The debate over open access is an important debate over the future of the Internet. On one side of the debate stand those parties who believe that the success of the Internet is a product of the absence of extensive regulation. That side believes that open access is a regulatory burden that could disrupt the growth of the Internet. The other side believes that the Internet stands at the threshold between remaining an uncensored and easily accessed medium of mass communication and becoming a few broadcast-like networks under the control of a few companies. Cable television companies' entry into the market for Internet access has become a flashpoint for this view.

Broadband technologies are capable of transforming the Internet into a video transmission system. If the Internet ever fully crosses over into broadband, which is not certain, then those who own broadband may dominate the Internet.

But who will own broadband? The options for broadband transmissions are not diminishing. Telephone lines may have been the only viable option twenty years ago. But cable and high-speed geosynchronous satellites entered the market in the early 1990s and terrestrial microwave only a few years ago. Today there are low earth orbit (LEO) satellites preparing for launch. Tomorrow we will be riding the electromagnetic fields of electrical wires or directing our "palm coms" toward high-altitude unmanned planes, blimps or balloons. The future of broadband technology is wide open.

Given the increase in the number of competing parties and competing technologies, each of which provides a viable high-speed on-ramp to the Internet, it does not appear at this time that regulatory intervention on the magnitude of open access is either prudent or advisable.

## GLOSSARY

ADSL: Asymmetric Digital Subscriber Line (ADSL) is a broadband service offered by telephone companies. ADSL technology is capable of transmitting digital information at high bandwidths (up to 6 Mbps) on existing phone lines to homes and businesses.

Bandwidth: The bandwidth of an analog communications/video system is a measure of the range of frequencies the system carries, measured in MegaHertz (MHz). In digital systems, the bandwidth of the system is the speed data is transmitted over the system measured in bits per second (bps).

Broadband: A communications system the bandwidth of which exceeds a given minimum. This report uses the FCC's definition of broadband: any system capable of transmitting data in excess of 200 Kbps upstream and downstream. All communications systems that operate at a slower speed than broadband are called "narrowband."

Browser: A browser is an application program that provides a way to look at and interact with all the information on the World Wide Web.

Cable modem: A cable modem is a device installed in the home that enables cable modem subscribers to attach personal computers to a local cable TV line and interact with the Internet at high speeds.

CCSS: The Consolidated Consumer Service Standards are consumer protection standards for multichannel video providers serving consumers in the City of Los Angeles.

Channel: In telecommunications in general, a channel is a separate path through which data or electrical signals flow. In radio and television, a channel is a separate incoming signal or program source that a user can select.

CMTS: A Cable Modem Termination System (CMTS) is a device installed at the cable headend (primary transmission facility) that connects the cable system to the Internet.

CLEC: A Competitive Local Exchange Carrier (CLEC) is a company that competes with the already established local telephone business by providing its own network and switching or by reselling the local telephone company's phone service. The term distinguishes new or potential competitors from established local exchange carriers (LECs) and arises from the Telecommunications Act of 1996, which was intended to promote competition among both long-distance and local phone service providers.

DOCSIS: Data Over Cable Systems Interface Specifications (DOCSIS) is a cable industry protocol developed to satisfy requirements of federal law that cable modems be interoperable, i.e. capable of being used on diverse cable systems. DOCSIS is a standard developed for cable modems and CMTSs.

Downstream/upstream: Downstream is the direction that data flows when it is traveling from the cable operator's headend to the subscriber. Upstream is the opposite of downstream.

DSLAM: A Digital Subscriber Line Access Multiplexer (DSLAM) is a network device used by telephone companies to offer high-speed data services to customers over telephone lines. A DSLAM is installed at the telephone company's central office and is the telephone company's equivalent to a cable company's CMTS.

ILEC: An Incumbent Local Exchange Carrier (ILEC) is a telephone company in the U.S. that was providing local telephone service when the Telecommunications Act of 1996 was enacted.

Internet: The Internet, sometimes called simply "the Net," is a worldwide system of computer networks - a network of networks in which users at any one computer can, if they have permission, get information from any other computer (and sometimes talk directly to users at other computers). The most widely used part of the Internet is the World Wide Web (often abbreviated "WWW" and called "the Web").

IBP: An Internet Backbone Provider (IBP) is a company that owns, installs and manages long distance networks of routers using leased or owned high-speed data lines. These long distance networks link the wide area networks that make up the Internet.

ISP: An Internet Service Provider (ISP) is a company that provides individuals and other companies access to the Internet and other related services such as web site building and hosting. An ISP connects subscribers to the Internet. Some ISPs offer specialized content to subscribers in addition to access to the Internet.

Kbps: Kbps stands for kilobits per second (thousands of bits per second) and is a measure of the speed data travels on a data transmission medium such as twisted-pair copper cable, coaxial cable, or optical fiber.

LMDS: Local Multipoint Distribution Services is a point-to-multipoint wireless microwave transmission service with two-way capability to transmit voice, data, and other video information.

Local Loop: In telephony, a local loop is the wired connection from a telephone company's central office to a single customer's telephone. This connection is usually on a pair of copper wires called twisted pair.

Mbps: Mbps stands for megabits per second (millions of bits per second) and is a measure of bandwidth (the amount of data that can flow in a given time) on a data transmission medium such as twisted-pair copper cable, coaxial cable, or optical fiber.

MMDS: (Multichannel Multipoint Distribution Service) A MMDS is similar to a LMDS. A MMDS uses the same technology as a LMDS system to transmit multiple channels of voice, video, and data signals over a larger geographic area.

NAP: A network access point (NAP) is one of several major Internet interconnection points that serve to connect local ISPs to multiple IBPs so that, for example, a user in Portland, Oregon can reach the web site of a customer in Miami, Florida even though they use different ISPs.

OSP: An Online Service Provider (OSP) offers a specialized content service an extensive online array of services of their own apart from the rest of the Internet and sometimes their own version of a Web browser.

Narrowband: A communications channel, such as copper wire or part of a coaxial cable channel, that transmits voice, facsimile or data at rates less than broadband systems. Standard narrowband speeds are 28.8 Kbps and 56.6 Kbps.

Peering: Peering is the arrangement between ISPs and/or IBPs to carry each other's data traffic on their systems at no charge. Peering parties interconnect at network focal points such as the network access points (NAPs) in the United States.

Unbundling: A term of art that describes a service provider's ability to sell components of its services or lease use of its facilities to other service providers.

Transit: Transit is the connection to and use of a telecommunication path provided by a vendor at a charge. It is the paid-for equivalent of peering.

Wireline: A system that uses cables to transmit signals instead of air-borne radio frequencies.

Wireless: Any broadcast or transmission that can be received through microwave or radio frequencies without the use of a cable connection for reception.

World Wide Web: The World Wide Web is the universe of network-accessible information. The most widely used part of the Internet is the World Wide Web (often abbreviated "WWW" or called "the Web"). Its outstanding feature is hypertext, a method of instant cross-referencing. Web "surfing" is done with a Web browser, the most popular of which are Netscape Navigator and Microsoft Internet Explorer.

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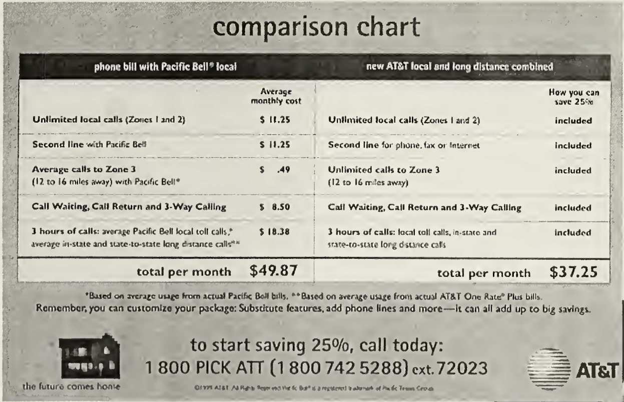
# AT&T Local Telephony Over Cable



## comparison chart

| phone bill with Pacific Bell® local | | new AT&T local and long distance combined | |
|---|---|---|---|
| | Average monthly cost | | How you can save 25% |
| **Unlimited local calls** (Zones 1 and 2) | $ 11.25 | **Unlimited local calls** (Zones 1 and 2) | included |
| **Second line** with Pacific Bell | $ 11.25 | **Second line** for phone, fax or Internet | included |
| **Average calls to Zone 3**<br>(12 to 16 miles away) with Pacific Bell* | $ .49 | **Unlimited calls to Zone 3**<br>(12 to 16 miles away) | included |
| **Call Waiting, Call Return and 3-Way Calling** | $ 8.50 | **Call Waiting, Call Return and 3-Way Calling** | included |
| **3 hours of calls:** average Pacific Bell local toll calls,* average in-state and state-to-state long distance calls** | $ 18.38 | **3 hours of calls:** local toll calls, in-state and state-to-state long distance calls | included |
| total per month | $49.87 | total per month | $37.25 |

*Based on average usage from actual Pacific Bell bills. **Based on average usage from actual AT&T One Rate® Plus bills.
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